



THE HEIR OF ALL THE AGES

In this beautiful painting, the artist, Mr. T. C. Gotch, has tried to picture the wonderful idea that a child of to-day is the heir of all the ages, inheriting all the treasures of learning and the achievements of the past.

The Book of Knowledge

The Children's Encyclopædia

EDITORS-IN-CHIEF

ARTHUR MEE

Temple Chambers, London

HOLLAND THOMPSON, Ph. D.

The College of The City of New York

With an Introduction by

John H. Finley, LL. D.

President of The College of The City of New York

DEPARTMENTAL EDITORS AND CONTRIBUTORS

All Countries

FRANCES EPPS

Natural History

ERNEST INGERSOLL

Plant Life

HELEN INGERSOLL

Stories and Legends

EDWARD WRIGHT

Familiar Things

HAROLD BÉGBIE

Men and Women

ERNEST A. BRYANT

Our Own Life

DR. C. W. SALEEBY

Famous Books

J. A. HAMMERTON

School Lessons

A. M. SKINNER, B. S.

Poetry and Rhymes

A. VON HARTMANN

Dominion of Canada

W. PETERSON, LL. D., D. Litt.

The United States

HOLLAND THOMPSON, Ph. D.

The Earth

DR. C. W. SALEEBY

Golden Deeds

M. PERRY MILLS

Book of Wonder

ARTHUR MEE

Things to Make & Do

H. G. FLEMING

Volume XX.

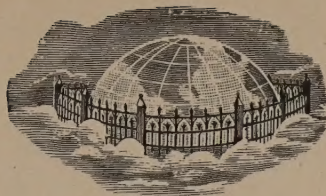
NEW YORK: THE GROLIER SOCIETY

LONDON: THE EDUCATIONAL BOOK CO.

Text and Illustrations in this work are protected
by copyright as follows:

Copyright, 1911, 1912, by THE GROLIER SOCIETY
Copyright, 1911, by THE EDUCATIONAL BOOK CO.
Copyright, 1910, 1911, 1912, by M. PERRY MILLS
Copyright, 1908, by AMALGAMATED PRESS, LTD.
Copyright, 1868, 1870, 1872, 1874, 1875, 1876, 1878, 1881, 1883,
1884, 1886, 1887, 1888, 1889, 1890, 1891, 1902, 1906, by
• TICKNOR & FIELDS, JAMES R. OSGOOD & Co., and
HOUGHTON, MIFFLIN & Co.
Copyright, 1874, 1880, 1892, 1894, 1895, 1896, 1904, 1908, by
CHARLES SCRIBNER'S SONS
Copyright, 1908, by THE CENTURY CO.
Copyright, 1906, by THE BAKER & TAYLOR CO.
Copyright, 1901, 1902, 1906, 1907, 1909, by H. C. WHITE CO.
Copyright, 1897, 1907, by THE AMERICAN BOOK CO.
Copyright, 1890, 1899, by JAMES WHITCOMB RILEY
Copyright by PHOTOGRAPHISCHE GESELLSCHAFT
Copyright by KEYSTONE VIEW CO.
Copyright by UNDERWOOD & UNDERWOOD
Copyright, 1899, by R. L. SINGLEY

The poems by Thomas Bailey Aldrich, Phoebe Cary, Ralph Waldo Emerson, Oliver Wendell Holmes, James Russell Lowell, John Greenleaf Whittier, Henry Wadsworth Longfellow, Edmund Clarence Stedman, Richard Watson Gilder, John Hay, Edward R. Sill, Bayard Taylor and Celia Thaxter included in this work are reprinted by permission of, and by special arrangement with, Houghton Mifflin Company, the authorized publishers of the Works of these authors. The poems by Robert Louis Stevenson, Eugene Field, Mary Mapes Dodge, Richard Henry Stoddard and Henry Van Dyke included in this work are printed by permission of Charles Scribner's Sons.



CONTENTS OF THIS VOLUME

This is a short guide only to the principal contents of this volume. It is not possible to give the titles of all the Poems and Rhymes, Legends, Problems, colour pages, questions in the Wonder Book, and many other things that come into the volume; but in all cases are given the pages where these parts of our book begin. The full list of these things comes into the big index to the whole work.

	PAGE		PAGE
THE BOOK OF THE UNITED STATES		THE STORY OF FAMOUS BOOKS	
The Lost Colony of Roanoke	6131	Walden	6301
THE BOOK OF FAMILIAR THINGS		Capture of the Inca	6302
A Figure Buried by a Storm of Fire .	6136	THE BOOK OF STORIES	
A Wonderful New Dreadnought . . .	6162	The Stone in the Road	6191
Nothing Like Leather	6167	The Wonderful Friends	6192
Boring Through the Alps	6203	The Grey Terror	6195
The Greatest Navy in the World . . .	6233	Why the Swallow Builds on the Wall	6198
Down in the Deep, Deep Sea	6285	Stories Told in India 3,000 Years Ago	6200
THE BOOK OF WONDER		The Robber and the Monk	6201
Who Is the Man in the Moon?	6163	The Man Who Broke the News	6201
How Does a Gyroscope Work?	6164	The Pair of New Boots	6201
Why Can't Light Turn a Corner? . . .	6165	The First Apple Dumpling	6305
What Is a Cynic?	6165	The First Home Sweet Home	6306
Which Is the Bird with the Longest Tail?	6166	When the Fire Went Out	6308
Why Does a Lever Make a Weak Man Strong?	6166	How They Got a Holiday	6310
See index for full list of questions.		THE BOOK OF POETRY	
THE BOOK OF NATURE		The Bell of Atri	6227
The Hunters of the Wild	6147	The Miller of Dee	6228
The Story of Your Dog	6265	Little Thoughts from Browning	6229
The Winter Sleep of Animals	6295	Little Verses	6230
THE BOOK OF MEN AND WOMEN		THE BOOK OF ALL COUNTRIES	
Victor Hugo, a King of Men	6155	What I Saw at Pompeii	6137
A Scotch Lad Who Became a Millionaire	6275	The Scattered Nation	6217
THE BOOK OF OUR OWN LIFE		A Little Mountain Land	6257
Jack's Fresh Air Supply	6179	THINGS TO MAKE AND DO	
The Wonderful River of Air	6251	How to Play Football	6245
Jack's Wireless Telephone	6291	What to Do in Cases of Drowning . . .	6247
THE BOOK OF CANADA		How to Mark Your Name on Fruit . . .	6249
The American Tourist in Canada . . .	6183	What to Do in a Thunderstorm	6249
Newfoundland, the Island Colony . . .	6279	Flashing Messages at Night	6250
The Spirit of Canada	6283	COLORED PLATES	
		The Heir of All the Ages	Frontispiece

YOUR editors have admired Sir Walter Raleigh from their boyhood, and in other volumes of our book you will find much said about him. His most important claim to the admiration of American boys and girls has been hardly mentioned, however, and this story will tell you why Americans should respect his memory.

THE LOST COLONY OF ROANOKE

THE first expeditions to the New World had no idea of permanent settlement. They spent their time looking for the passage to India and China, or else sought only gold and silver. Walter Raleigh, and his half-brother, Sir Humphrey Gilbert, were among the first Englishmen who desired to set up "little pieces of England" in America. They started with seven small ships in 1578, but had a fight with the Spaniards, and returned without success. Sir Humphrey Gilbert was lost at sea, returning from a voyage to Newfoundland in 1583, but Raleigh was not discouraged.

The next year Queen Elizabeth gave him permission to settle any "remote heathen and barbarous lands," still unoccupied by Europeans, giving the people who should settle there all the rights of Englishmen, including the right to make their own laws.

TWO LITTLE SHIPS SENT OUT TO EXPLORE

Raleigh soon sent out two little ships commanded by Philip Amadas and Arthur Barlowe, which reached the coast of what is now North Carolina, July 4th, 1584. Following the coast they came to a gap in the sand banks, which fringe the coast and entered Pamlico Sound. They landed upon an island, which to their eyes seemed a paradise. The stately pines, the cedars, and the abundance of grapes, which they reported grew down to the water's edge, so that "the very beating and surge of the sea overflowed them," filled them

with wonder. Game and fish were also plentiful.

The Indians were friendly and brought them fish, and were much pleased with a few trifles given them. The explorers visited the Indian village, and were charmed with all they saw. Two of the Indians agreed to go to England with them. The name of one was Manteo, and the little town on the island to-day bears his name. The whole country was named Virginia, in honour of Queen Elizabeth, who was sometimes called the "Virgin Queen."

Sir Walter Raleigh was delighted with the report of his explorers, and early in 1585 sent out over a hundred men under Ralph Lane to found a colony. Unfortunately Sir Richard Grenville, who commanded the ships which took them over, quarrelled with the Indians and set fire to their corn. This made them less willing to help the colonists. Though they did not attack them very vigorously they did try to starve them out.

THE FIRST COLONY DOES NOT PROSPER

The little colony built a little fort, but seems to have spent more time exploring and hunting gold than in planting crops. Some of them followed the Roanoke River, hoping to find a passage to China. One of the party was John White, who had some skill in drawing. He made pictures in water-colours of the Indians, at work and at play, and of their houses. Some of these were published at Frankfort, in Germany, in 1590, five years after they were

made, to illustrate the story of the expedition, written by Thomas Hariot, the famous mathematician. Both story and pictures tell us much of Indian customs, before they were changed by the white men. The pictures themselves are in the British Museum in London.

As the Indians refused to sell their corn, the party began to suffer for want of food the next year, and the expected supplies did not come from England. Just at this time Sir Francis Drake, of whom you may read on page 848, stopped on his way home from an ex-

dant supplies, with a guard of fifteen men, and sailed back to England.

All England was then stirred up over the war with Spain, which all saw was coming, but Sir Walter Raleigh would not give up. So in the next year, 1587, he sent out another colony, of about 150 men, women and children under John White, who drew the pictures we show you here. Governor White was ordered to go to Roanoke Island, get the supplies and the fifteen men left there the year before, and then go further north into Chesapeake Bay, where there



INDIAN HUNTERS AS JOHN WHITE SAW THEM

This is another of John White's pictures, showing in the foreground two Indian hunters, and behind other hunters chasing the deer. You can easily distinguish the figures he drew from life and those for which he drew upon his imagination. The physical strength of these men seems to have impressed the artist very much.

pedition against the Spaniards. He agreed to take the hungry, homesick men home, as they asked, and the island, which was now called Roanoke, was deserted.

A little while later Sir Richard Grenville arrived with the supplies which had been delayed, only to find the island uninhabited. He could not believe that all the men were dead, and did not guess that they had gone back to England. He thought that they were somewhere on the mainland, and so landed abun-

were better harbours. The commander of the ships, however, was anxious to get back to Europe, and after a part of the men had gone to Roanoke Island in a small ship, he landed all the rest on the coast, and sailed away.

THE THIRD COLONY, AND VIRGINIA DARE

The party looked in vain for the fifteen men and the supplies, but found only a skeleton here and there. The Indians had killed the men. Since the colony had to remain, all set to work to

HOW THE SOUTHERN INDIANS COOKED



The methods of cooking among the Indians seem to have interested the first Europeans who came to America very much. The two pictures on this page show that the Indians on the North Carolina coast did not suffer for want of food. The earliest explorers tell us all kinds of food were plentiful. Here we see the preparation of a sort of stew, of fish, green corn and other things hard to recognise.



The waters of North Carolina to this day abound in fish of every description, and here is the simple method of cookery common among the Indians. Several varieties seen in the picture may be recognised by every one who has studied fish. The report of Sir Walter Raleigh's first expedition says that an Indian caught all that the ships could use in a very short time.

build huts. In the party was the governor's daughter, Eleanor White, who was the wife of Ananias Dare. To them was born, August 18, 1587, soon after they landed, a little daughter whom they named Virginia. This little girl, Virginia Dare, was the first child born of English parents in our country. The county of North Carolina, of which the island is a part, is called Dare County in her honour.

Since the Indians had not only killed

expected to conquer England, was almost ready, and every ship in England was being prepared to fight. Sir Walter Raleigh made two attempts to send aid to his little colony. Once the ships were seized for the government, and the second expedition, under Governor White, was driven back by Spanish ships. Then came the Armada, about which you may read on page 848, and there were many months of fighting, in which Raleigh had a prominent part.



A CEREMONIAL DANCE AMONG THE SOUTHERN INDIANS

We are told that this picture represents a solemn festival dance among the Indians of what is now North Carolina, as seen by an Englishman more than 325 years ago. The savages, almost naked, danced around the circle of posts, striking them with their rattles as they passed. The one who could dance the longest and jump the highest was considered the winner.

the men, but had taken or destroyed the stores and supplies they were set to guard, the colony had great need of many things in order to live. Governor White, therefore, thought it necessary to take the one little ship left them and start back to England for help, when his little granddaughter was about a week old.

When he arrived in England the great Armada, which Philip of Spain

Finally poor Governor White arranged with a sea-captain sailing to the West Indies to take him as a passenger, and to stop on his return voyage. Finally, in August, 1590, when his little granddaughter would have been three years old, he reached Roanoke Island.

GOVERNOR WHITE DOES NOT FIND HIS GRANDDAUGHTER

On the island there was no sign of human life; the doors of the huts stood

open, and grass grew in the fort. Chests and boxes which had been buried had been dug up. Some of his books and drawings had been scattered to the winds. There were no signs of a struggle, and the only clew was the word CROATOAN carved deep on a great tree.

Before Governor White had returned to England, it had been agreed that if

failure of his last, in 1602, just before he was imprisoned, declared that he would yet see "an English nation in Virginia."

WHAT BECAME OF THE LOST COLONY OF ROANOKE

The settlers at Jamestown, after their arrival in 1607, were told that this colony had lived peacefully among the Indians for several years, adopting the



Photograph by Brown Bros.

THE CAPITOL OF NORTH CAROLINA AT RALEIGH

Though Sir Walter Raleigh's attempts to found a colony in the New World failed, he was not forgotten. When North Carolina became a state it named the new town, built for the capital of the state, Raleigh, in his honour. This is the capitol building in the town which reminds the people of the great man, who tried so faithfully to settle the country.

the colonists decided to move, they should leave a record of the place to which they had gone, with the sign of the cross if they were in distress. There were no crosses by the word, Croatoan, which was the name of an island, to the southeast.

The ship proceeded toward the island, but one of those severe storms common on that coast sprang up and after beating about for several days the captain, in spite of the prayers of the father and grandfather, set sail for England, leaving the colonists to their fate.

Raleigh made two further efforts to find his colony, five in all, and after the

Indian mode of life. Finally the medicine-men had stirred up the tribe to murder all except four men, two boys and a girl. Was this girl Virginia Dare? Perhaps.

To this day many believe that some of the colonists, at least, were adopted by the Indians, and point to the grey eyes and red hair sometimes seen among the Croatan Indians, who yet live in North Carolina. The Indians themselves say that they have been told by their grandfathers, who were told by their grandfathers, that their ancestors came over the sea and could "speak out of a book."

A FIGURE BURIED BY A STORM OF FIRE



This beautiful bronze figure of Mercury, the Roman god of commerce, was discovered at Herculaneum, a city nearer to the crater of Vesuvius than Pompeii, and therefore buried more deeply in the terrible catastrophe of the year 79. Mercury, who was the same god as the Hermes of the Greeks, was always represented as an athletic youth, splendidly developed by physical exercise. He was the herald of the gods, and wore wings on his sandals to carry him swiftly as the wind. Observe the graceful pose of this fine figure, now to be seen, with hundreds of other noble monuments, in the museum at Naples.



CONTINUED FROM PAGE 6038.

WHAT I SAW AT POMPEII

NOTHING will live longer in the mind of a visitor than this city of a vanished life, a sight to look upon with doubting eyes even as you walk through its streets and sit down in its houses; but something almost beyond belief, when, afterwards, you fill in all that you have seen of this city which passed out of the world in a night.

There are mightier ruins in the world than Pompeii, things bigger to look at, things bigger in history, things that stir the mind more in themselves; but nowhere is there so great an area of ruin so well restored to its former appearance as this.

Here is a city nearly two miles round, with streets of houses, with market-places and shops, with gardens and squares and monuments; all so well dug out of the earth that if the tenant of one of these houses were to come back to life, and were set down at one of the three gates of Pompeii, he would walk along the old pavement he helped to wear down 2,000 years ago, and would walk to his house quite naturally,

recognising his old home, in some cases, by paintings still fresh at the gate. He would find the mosaic floor still almost as new in many of his rooms; he would find beautiful statues still unbroken; he would find the pipes which brought water to his bath still in their place; he would find the bath still capable of holding water; and he would find things at home in such a condition that no power would make him believe that his home had been buried in the earth nearly 2,000 years. It is difficult to think of anything so hard to believe as Pompeii. Every little detail has been preserved. Here, in a kitchen, is a pan on the fire, resting on the ashes which were boiling water more than fourteen hundred years before the discovery of America.

It is this which makes Pompeii almost too true to be true — the preservation, through all that dread catastrophe, through all these nineteen centuries, of *the very life of the moment when Pompeii heard its doom.*

The architecture of this vast ruin is wonderful. The freshness of some

of the colour is as if it were done yesterday. The sense of luxury is everywhere, and there is even a sort of atmosphere that comes up from the long ago. But the miles of ruin, the well-planned houses fit for kings, the famous frescoes and mosaics, which are in some cases our only picture-record of historical events, are, with all their value and their tremendous interest, not the most impressive fact of Pompeii. Pompeii is unmatched as something preserved through nearly twenty centuries, preserved in big and in little so that identity is easy; but Pompeii is unique in the world because it has stamped for ever upon the earth itself the life of a single moment in the dim mists of Time. Remember, a moment; not a period, not a day, not even an hour—but a *moment*, for one may see the pan boiling on the fire, the loaf of bread half eaten, the meat being cooked for dinner, the wine still in the bottle, the ink still in the pot, the key still in the door.

You may visit the cellar where sixteen people hid themselves when

the calamity came, where the master of the house was found with the key in his hand, a slave close behind him with money and valuables. Outside is the courtyard from which they must have fled.

You may even see the pain on a man's face as he died on that terrible day. There were no cameras to take photographs then, but Nature can do without cameras.

In the ashes where they lay, the features of these poor people were pictured as in a photograph; the ashes hardened so that the likeness was preserved through all the centuries; and

when these bodies were discovered there came to Signor Fiorelli a wonderful idea. Removing the bones carefully, he filled the space with plaster, making a perfect image of the figure which had lain there, hidden from sight, for more than a thousand years. And here to-day lies the image of a man in stone, his face wrought with the very pain of death. Not all the destructiveness of Vesuvius, not all the weight of the earth for nineteen hundred years, has changed a muscle of this dead man's face, and he lies to-day, like a man turned into stone, that all the world may see something of that awful mo-

ment when a great city vanished from the earth. Near by him lies the image of a dog. And here, near the homes in which they lived, lie images of other men and women—men and women no longer now, but only forms, statues that Michael Angelo never could have rivalled.

It is almost tame, after this, to think of all the wonderful things the guide would show you if you allowed a guide to hide the interest of

Pompeii from you, as guides do; but there are three wonders of Pompeii. There is the wonder that it should ever have been built, so rich in art, so poor in vision; there is the wonder that it could ever be preserved from so tremendous a destruction; and there is the wonder that it should have been lost hundreds of years and found again.

It must have been interesting to look upon, and there is no wonder that Rome flocked here to live its lighter life, that emperors and statesmen and poets and nobles had houses here. And what houses they were, occupying a whole street sometimes, lavish in paintings



A mosaic in the floor of a doorway in Pompeii, with the words *Cave Canem*, "Beware of the dog."

HOW A CITY WAS SEALED UP BY A STORM



THE BEAUTIFUL CITY OF POMPEII, AS IT LAY HIDDEN FOR NEARLY 2,000 YEARS

No more terrible thing ever happened to a city full of life and gaiety than the fate which befell Pompeii, with its many splendid buildings—temples, palaces, baths, and theatres—in which were stored treasures of art and learning. On the morning of August 23, in the year 79 A. D., it must have been a brilliant sight to see. But within a few days Pompeii lay buried under a sea of ashes, to be remembered only as a name for the next seventeen hundred years. Mount Vesuvius, which had been sleeping for centuries, woke up suddenly in the year 63, and caused an earthquake that destroyed a great part of Pompeii. The people rebuilt the city, and had almost finished it when a still more terrible calamity overtook them. The mountain poured forth a storm of burning ashes, which fell upon the city and buried it completely. Then heavier cinders poured forth from the mountain and sealed up the city, as shown in this picture.

POMPEII COMES OUT OF THE EARTH AGAIN



Pompeii, buried for more than seventeen hundred years, has in the past century been brought to light again, and here we see it as it is to-day. Here are the streets and pavements, the houses and shops, theatres and temples, law-courts and market-places, in which we can walk about as the old Romans did.



This shows one of the main streets of Pompeii, which has been completely unearthed. The curbstones and stepping-stones, the paths and roadway, are exactly as in the days of the Emperor Titus. Nearly all we know of the life and manners of the Romans has been revealed by the discoveries at Pompeii.

BEAUTIFUL COLUMNS COME TO LIGHT



This is the Basilica at Pompeii. The word basilica comes to the Romans from the Greek and means either a court of law or a sort of merchants' exchange. In form it was a long rectangular hall supported by great columns. Later both the word and the kind of building were borrowed for churches.



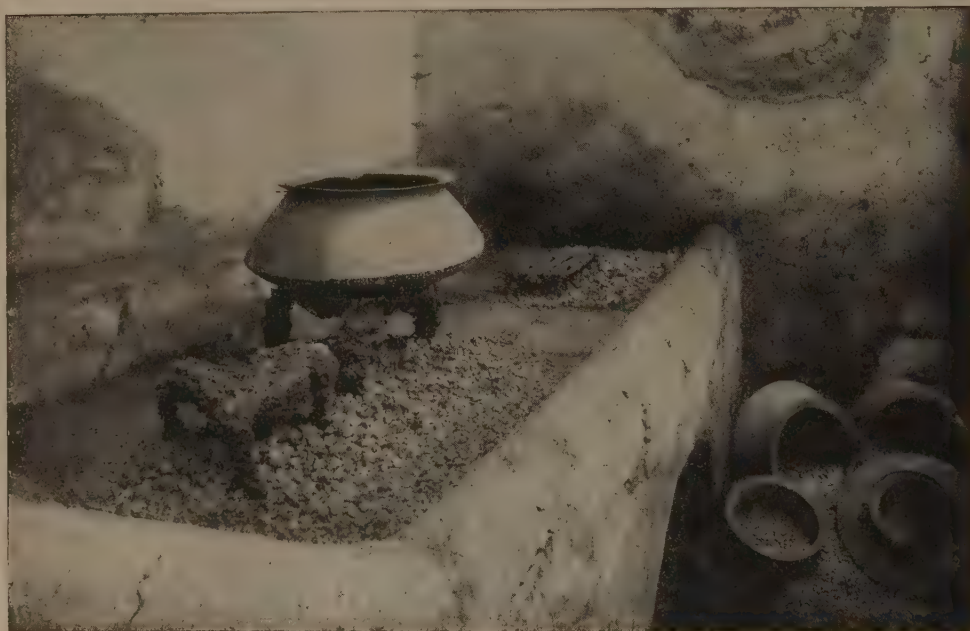
Photographs from Brown Bros.

The view of the ruins of Pompeii given on the preceding page was taken from above, and does not show the open spaces shown in this, which is even more interesting, if there can be said to be degrees of interest in this marvellous city. Notice how clearly the beautiful fluted columns stand out.

and marbles. It is odd to stand at the gate of one of these houses and look at the mosaic in the floor, a picture of a dog, with the old *Cave Canem*, "Beware of the dog," under it; and it is wonderful to stand in the garden of another house, with flowers growing now where they grew then, with lovely little statues still unbroken where they were first set up, with the gateway still fresh with paintings, with colour everywhere, and with people moving to and fro, and to imagine to yourself that the lord of the house is giving a party and you are

about in. Here are sculptures hewn in marble, that seem as near to life as those stone men and women still lying in Pompeii.

Hundreds of pieces crowd the huge ground floor of this museum, most of them in marble or in bronze, and most of them from the villas and temples and streets and spaces of this stricken city. No corner of Pompeii was left unadorned; it is astonishing to see the splendid friezes in the arcades, where things were bought and sold: even the butcher and the fishmonger, with



A PAN STILL ON A FIRE IN A KITCHEN IN POMPEII, AFTER BEING BURIED 1,800 YEARS

among the guests. No great imagination is called for at Pompeii, for if imagination did not people these houses and these streets the very stones themselves would cry out. One thing you must do, however, before you go to walk about these streets of destruction: you must go upstairs and downstairs in the museum in Naples, where what is left of all that was beautiful and all that was useful in Pompeii is gathered together. Here is a collection that must stir the dulllest mind that ever wandered mechanically about a great museum. Here are the marbles—frescoes, statues, columns, tombs,—that made Pompeii a beautiful place to walk

their benches next to an emperor's temple, carried on their unlovely work in an artistic environment. It is not easy to understand how rich this place must have been until you have seen the museum, because it has been the habit in the past to carry off the art treasures of Pompeii to Naples. The city itself is to-day without roofs, like a city after a great fire has done half its work, with beautiful things left only inside houses and courtyards.

For, of course, the treasures of Pompeii can never be got together again. How much of this artistic wealth must have been destroyed in that year 79! How much was carried off by emperors

A HOUSE IN POMPEII—AS IT WAS & AS IT IS



The wealthy noblemen of Rome had beautiful palaces at Pompeii, to which they went in the hot summer months, just as people go to their country houses for a holiday nowadays. Here is the atrium, or drawing-room, of a fine house in Pompeii. The house belonged to Cornelius Rufus.



Here we see the same room as it appears to-day. In the middle is a fine marble water-basin, let into the floor and surrounded by mosaics, and on the margin are the supports of a rich marble table. Rooms opened out all round, and in the distance can be seen the remains of the peristyle—an open court.

and popes to decorate their palaces and churches! How much lies still buried in the earth, waiting for the spade to bring it into the light of day! Only half, perhaps, of this field of ruin has been recovered in these last 150 years. Eighty men are at work with their axes and spades; ever digging up houses and gardens and marbles, and nobody knows whether there may be a new piece of sculpture, or some fragment of mosaic showing Alexander winning the mastery of the world.

For hundreds of years this vast treasure-house was unknown to the world, the ancients allowing it to be covered up when they had taken from the ruins all that they thought it contained, or all that they thought worth digging for; but this great Vesuvius spat out dust enough to bury Pompeii nearly twenty feet deep, and so it happened, therefore, that the ancients robbed the surface only, leaving the depths to be trampled down or built over or neglected throughout the Middle Ages. Then a farmer would dig up a piece of marble, and perhaps it would be a man's hand. A peasant found a piece of cloth as he dug his garden one day, and used it to clean out his oven. It did not soil, it did not burn — because it was a piece of asbestos cloth in which some ancient Roman had wrapped the ashes of a dead friend!

Coming to Pompeii by train, the traveller sees green orchards with stone columns rising among the trees, filling the mind with wonder as to what lies beneath. We come, too, upon whole fields black with lava, reminding us that while men dig up one civilisation, Vesuvius is even now covering up another. So does Vesuvius find work for the excavators of the centuries, keeping busy axe and spade for ever and ever.

And those busy axes and spades, which have revealed to the eyes of men this vanished city, have brought up out of the earth much more than a collection of marbles. The ground floor of the Naples Museum is filled with monuments, but come upstairs and see *a hundred thousand things*. That is not a guess, or a mere general number; there are, indeed, a hundred thousand

things, counting coins and brasses and everything that came out of the earth on Pompeii's Resurrection Day.

Here are the things with which they beautified their homes — little bronzes for the mantelpiece, hundreds of pictures from their walls, lovely vases of every kind. Here are locks and keys, and every sort of thing still used in a kitchen; pots and pans, and salt-cellar, and scales, and bottles, and knives; things for boiling twenty eggs at once; little stoves; actual beds that people slept on, chairs they sat in; stocks they put their prisoners in, in which four skeletons were found; safes in which they kept their valuables; pens they wrote with; ink still in the bottle, though now dried up; doctor's instruments such as are used to-day.

In one room are the cakes that were on the table when the calamity came, a loaf half cut, meat in a saucepan ready for cooking, peas, beans, prunes, raisins, fruits ready for dessert. Everything to eat seems to be in the room, fragments from the last dinner-tables of Pompeii, preserved through all but two thousand years by Mother Earth. And there is one thing you will not believe. There is an egg — *unbroken*! Think of it! Vesuvius destroyed this city, drove off its population, cut off at least 2,000 lives, all in an hour. It buried this city under thousands and thousands of tons of dust, buried it in the earth through all the years while Europe has been made. Vesuvius could do this, yet could not break an egg!

It is a distressing and depressing place, this city of emptiness and death. No hope can live here; nothing but despair can endure in these miles of ruin. The immortality of Pompeii is an immortality that no city need crave. It serves, in its death, to make prosperous the living city of Naples, for would so many come to Naples if it were not to see Pompeii and the Naples Museum?

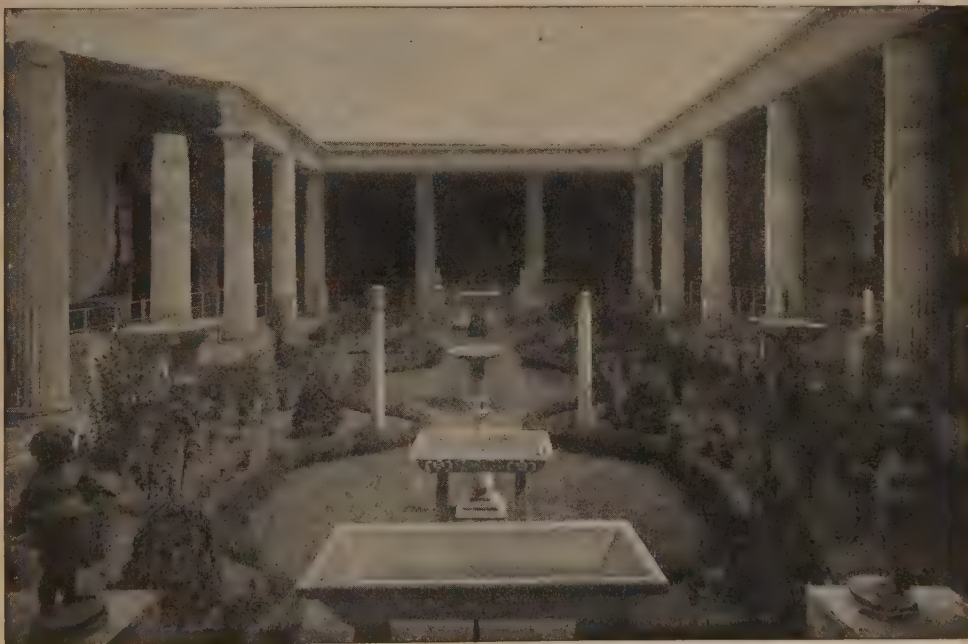
But Pompeii is worth any discomfort; it is something to see in one of Life's Red Letter Days, and something never to forget, for no other work of man's hands has ever been buried in the earth and come out so wonderful.

CONTINUED ON PAGE 6217.

A POMPEII GARDEN THEN AND NOW



This shows the happy life in one of the houses of Pompeii. The children are playing with their mother in a court similar to the one seen in the lower picture. These courts, inside the house and quite separate from the outside garden, were laid out with shrubs, flowers and fountains, and adorned with sculptures.



One of the wonders of the world is the way in which Pompeii has been preserved, so that we can see much of it almost as it appeared two thousand years ago. Here is the open court of a house of the first century as it may be seen in the twentieth century. It is almost identical with its original appearance.

THE OLD NEGRO BASKET-MAKER



This old negro lives just outside of a town in North Carolina. Once he was a slave, and, after he was set free, worked on the farm of the former owner, until the latter's death. By accident he became a cripple but still makes a comfortable living by weaving baskets from strips of white oak wood. These baskets are used in the cotton fields and for many other purposes, as they are firm and strong and last a long time.



YOUNG WILD ELEPHANTS BEING LED CAPTIVE BY TRAINED ANIMALS

CONTINUED FROM PAGE 6048.

THE HUNTERS OF THE WILD

HOW THE ANIMALS CAME TO THE ZOO

WHEN we spend a day at the Zoological Park, in New York, and see the enormous number of animals, birds, and reptiles there, we cannot but feel that we have around us a little model of the whole animal world. Of course, there are still many species of animals and birds not represented, for there are many which it is impossible to keep alive in captivity. However, we have before us a collection drawn from all quarters of the world.

They have come from the vast spaces of Australia, from the jungle of India, from the sub-tropical forests of South America, from the rolling prairies of North America, from the burning plains of Africa, from the frozen North, from the little islands where it is always summer; they are taken from the wild highlands of Tibet, from the steep sides of the Alps, from caves and burrows, from the air, and from the sea.

Many of the animals, after their capture, have made long journeys on foot through the desert, have been carried in ships across the sea, and have been treated on their way with as much care and anxiety as if they were royal princes. There are many other zoos like the one in New York,

not all so well stocked, but still good. There are several good collections in the United States and more than forty in Europe, to say nothing of private collections and a host of menageries.

To get together great families of animals such as these needs a world-wide system of hunting. We can see that this must be so when we look at the elephant, the rhinoceros, and the hippopotamus, with their huge bulk and terrible strength; the lions and tigers and leopards, with their savage natures, their strength, and speed; the bears, with their fierce, slow strength; the monkeys, with their agility and cleverness; the snakes, with their deadly powers.

Probably his own misfortunes first taught man how to capture animals more powerful than himself. The men of old times saw mammoths and other great creatures made prisoners by the marshes into which they wandered; and, desiring food, these men gathered their forces and attacked the imprisoned animals where they were. Then, having practised this for some time, they would learn to catch these animals by making traps for them, simply by digging a pitfall into which the creatures would fall.

To this day we employ this method for the capture of many of the animals which come to our zoos, particularly for the rhinoceros and the hippopotamus. Men often shoot the parent animals, and capture the young ones as best they can. But the methodical hunter lays his plans more deliberately.

As we already know, the mother hippopotamus, when she takes her young one out from home to drink at a pool, sends him on ahead, while she brings up the rear, carefully looking out for danger. The hunter gets to know the well-beaten paths in the reeds or grass or bushes leading to and from the water which the hippopotamuses take. He therefore digs a pit in the path and covers it over with boughs. The baby hippopotamus and the mother trot along, and suddenly, as the youngster puts his foot down, the earth seems to open under him, and he disappears from sight.

Now, if it were an open enemy which attacked her little one, the mother would charge with all her strength, but this disappearance is so mysterious that she turns round and bolts for home. The hunters come up, slip a noose over the head and front feet of the little one, then raise him from his prison, tie all four legs, and bind him up so that he can be carried away.

Much of the same plan is adopted for the snaring of the young rhinoceros, but here the difficulties are less, for the young rhinoceros is a better-tempered fellow than the other, and can soon be taught to follow his captors like a dog. A rhinoceros captured in Africa at once made friends with a tame goat, a vulture, a stork, and a baboon, and all the way down to the coast these friends were not to be separated. Especially was the young animal friendly with the goat, for it was upon the milk of this creature that it was first fed. The rhinoceros was taken to Germany, but the goat had to go with it, and when it was last photographed it had grown to be quite a big rhinoceros, while the goat was the proud mother of two kids, which lived with the rhinoceros.

Most of the lions which we see in zoos and menageries were captured

when young, though many are born in captivity. They are not taken without a struggle, unless they are very young, for when only six weeks or two months old they make a brave fight for liberty. Therefore, the hunters generally throw a net or cloth over them.

If they are very young, they have to be reared by the kind attention of some other animal. For this purpose goats and kind-tempered dogs are used. Naturally, these animals are a little alarmed at first at the rough and fierce manners of their foster-children, but there is a marvellous power of friendship between a mother animal and baby animals, even if the baby animals are of a different order entirely.

The same practice applies to the capture of tigers as to that of lions. When full-grown lions or tigers have to be taken, it is a much more serious business. Many hunters make the old pit-fall; then, when the animal has tumbled in, they lasso its feet and head, and throw a net over it. But often the animal injures itself in its fall, and dies.

The safer way, therefore, is to set a sort of gigantic mouse-trap. The door leading into the cage is held up by a spring. When the lion or tiger enters, and takes the bait, the spring is released and the door shuts down with a bang. Sometimes a lion, with more cunning than its fellows, suspects one of these traps, and, instead of walking into it, lies down and hides outside in waiting for the men who set the trap. One lion which was trapped got one of its paws shut in by the door, and when the hunters came up to secure the animal, it made a tremendous effort, burst open the trap, and, springing out, killed two of its would-be captors.

The same sort of trap serves for the leopard, the hyena, and the wolf, though the American master of craft, the wolverine, has been known to travel forty miles, stealing the bait from trap after trap set to catch it, and never once entering one of them.

The cheetah is one of the animals most commonly trapped in India, where the native princes keep packs of these animals for hunting. An interesting thing is that cheetahs, to be good

A DASH AFTER BIG GAME IN THE JUNGLE



THE HUNTSMAN, HAVING APPROACHED NEAR, MAKES A DASH UPON THE ANIMALS
Giraffes, zebras, elands, and other animals of this kind, always take to flight at the least sound. The hunter who wants to catch them alive has to be very cautious. He approaches them carefully, making no noise, and, keeping himself well out of sight till he is near, rushes out and overtakes the younger animals, that cannot run so fast as the older ones. It is the young animals that are wanted, as they will easily adapt themselves to a life of captivity, whereas the older ones are likely to die.

hunters, must be caught wild; those which have been born in captivity are worthless for the work. The natives have a peculiar way of catching these animals. Grown-up cheetahs are wanted, and the grown-up cheetah is the fastest runner in the world. Probably the fleetest thing on legs, next to itself, is the swiftest of antelopes. Should a cheetah see an antelope two hundred yards away, it runs with such amazing speed that it can catch the antelope before it has run four hundred yards.

Luckily for the antelopes, the cheetah can run only for a short distance.

When wild, the cheetah, after killing an animal, retires to some secluded spot to sleep off the effects of its meal. When it is hungry, it goes to a place where many cheetahs meet, generally in the neighbourhood of some tree. The natives tie running nooses to this tree, and the cheetah gets its head fast in one of these and so is easily captured.

When men set out to catch giraffes or deer, elands, and other animals from which little or no danger to themselves is to be feared, they approach very cautiously and quietly as near as possible to a herd, then suddenly dash out on their horses into the open in pursuit. Away go giraffes, zebras, and gnus, and gazelles, and antelopes in company. There are young ones with them, and it is these that the men capture. They really do not want the old ones, for they would be likely to die. Many animals do die in this way,

from a mixture of fright and sorrow. The young of wild animals, however, are like children; though they may feel their griefs acutely for the time being, they soon forget the bitterness of their sorrow. The young ones are introduced to cows or motherly goats, which, after a few protests, give the little things all the milk they need, and so fortify them for the long march which they will have to make night by night, when the hot sun is out of sight, down to some seaport.



THE GORILLA IN A TREE

No man has ever caught a grown-up gorilla alive

Men have caught species of nearly all the known apes and monkeys. Yes, even young gorillas and chimpanzees and gibbons have been taken. Hunters have never yet managed to take an adult gorilla alive, and probably never will, so fearful is its strength, so unyielding its ferocity. If they did, it would probably die by starving itself. Even the little ones cannot be kept alive, so homesick are they, and so delicate through the change of

climate and of food.

Hunters find it easy to catch monkeys and baboons. There are all sorts of ways of catching monkeys, for they are great thieves, and will go wherever food is to be got. In India the monkey is sacred, because an old tradition tells that a monkey god helped to do a great work for the people of the country. Therefore, recognising that they are secure from injury, they become very bold, and are a real nuisance. Out in the wilds they have great battles, and fight in the natives' gardens, doing

WATCHING FOR THE WILD ELEPHANTS



The capture of wild elephants alive is a very exciting business, and months are occupied in preparing for the hunt. A great enclosure is built, and hundreds of natives, armed with rifles, drums, and firebrands, surround the haunts of the elephants, and, by frightening them with noise and fire, drive them into the enclosure, of which we see a corner in this picture. They are afterwards secured and tamed.



The driving of the wild elephants into the enclosure is watched by Europeans from a platform built in a tree. Any number up to a hundred elephants may be caught at one time in this way. When they have been in the enclosure some time, tame elephants, trained for the purpose, are driven in, and these occupy the attention of the captives while their legs are tied to tree-trunks by natives.

grievous damage to the poor people's crops. One wily native decided to punish the ring-leader of a swarm of monkeys which had injured him in this way.

He made a hole in the ground, and in it he placed a nice ripe banana. He concealed round the mouth of the hole the noose of a rope, which he hid in the sand. This rope ran through an iron ring which was attached to the trunk of a tree near by; and the end of the rope the native himself held as he hid and waited. Up came the monkeys, the bold old male leader coming out into the open, while all his wives and children remained for the time being hiding in the bushes. Ambling up he caught sight of the banana lying in the hole and grabbed at it. The native pulled the rope, and the noose closed round the arm of the monkey.

A good pull at the rope drew the monkey up to the tree where the iron ring was fastened. Then the native came out, and, walking round and round the tree, wound the rope round the monkey till he was securely fastened. The man then got a pot of soap and a brush, lathered the monkey, and shaved him. Then he released the monkey, who returned to his companions. They gazed upon him with amazement and disgust, fell on him and beat him, and drove him away. Their band broke up, and the man and his crops were left in peace.

Baboon-trapping is exciting. It is easy to catch the animals, but the danger comes when they have to be handled, for their bite is terrible, and their strength is almost beyond belief. The hunters block up all the drinking-places but one. Near this they construct a trap like a hut, with a spring door. This is left open for some time, and grain is scattered in and about the trap, till the animals look upon it as a sort of refreshment-room. Then one day, when many are inside, a hunter pulls the trigger, the door shuts down, and the baboons are prisoners.

But no man dares go in to secure them. So pronged sticks are thrust through the sides of the trap, and by this means the baboons are fixed, one

by one, without hurt, to the walls of the hut, while their legs are secured. After they are thus tied, they are muzzled, and wrapped from head to foot in canvas, till they look like mummies. Very soon this treatment tames them, and they are placed in cages.

Elephant-catching is exciting and interesting. These great animals are so much used for work in India that it is necessary to make frequent hunts for their capture, because elephants are rarely born in captivity. There are four ways in which these hunts are carried out. There is the hidden pitfall, into which the poor creatures tumble, often injuring themselves badly. Another way is for brave natives to steal up to a wild elephant as the herd is running away, and to cast a noose round its leg. Then the rope is twisted round the trunk of a tree, so securing the runaway. A third plan is to pursue a herd, the hunter riding on an elephant, and casting a noose over any one that he can catch. This, however, is not satisfactory, for by this means only the slowest, and therefore not the best, animals are caught, and there is great risk of injury, not only to the fleeing elephant, but to that which is pursuing, as well as to its rider. The best-known way of capturing elephants is to surround a herd and take them all.

When food is scarce, a big herd of elephants will break up into several small groups, the several parties keeping a few miles apart from each other and coming together again when rains have made food plentiful. The hunters go out three months in advance of the time fixed for the actual attempt at capture.

The party of men numbers two or three hundred. Their work is to find out the groups of elephants, and gradually to drive them all together. The men make, as it were, a ring round that part of the country over which the scattered herds are distributed. All work toward one centre and to this the elephants are gradually driven. Generally the wild elephant will seek safety in flight rather than attack a man.

While the hunters are slowly working the elephants up to a certain point, other

A WILD ELEPHANT BEING TIED TO A TREE



Tame elephants are very skilful in assisting hunters to tie captured animals, and they seem to enjoy the business thoroughly. They entice the captives near suitable trees, and all through show almost human intelligence. Here two tame elephants are leading a young wild elephant near a tree, while a man is about to get a rope round the captive's leg. Tame elephants often use their trunks to protect the men.



One after another the legs of a captured elephant are fastened to stout trees. The creature gets furious, but, after wasting his energy in pulling and trumpeting, is at last exhausted, and gives in. Then he is treated to luscious food, and gradually becomes tamer, until at last he can be untied. Here the elephant seen in the upper picture has given up the struggle, and lain down. When a wild elephant will not lift up a leg so the rope can be put round, the hunters tickle his foot with a leaf, and he at once raises it.

men are busy preparing a great enclosure. A space of ground is fenced round with a giant stockade, each piece of timber being the trunk of a strong tree. There is only one way into this—a narrow, funnel-shaped opening, which is closed once the herd has entered. At last, on the day fixed, the whole herd—males, females, and little once—is driven toward this entrance. So far the task of the hunters has only been to keep the elephants together day and night.

By day they fire their guns to keep them within certain bounds; at night they light large fires to keep them from breaking out of the ring. Now that the animals are at last in the fatal enclosure, the time has come for the *mahouts*, as the elephant-keepers are called, to show their skill. They could do very little were it not for the help given by the tame elephants, as will be seen in the following account of a capture.

A herd of wild elephants had been driven into a safe enclosure, and two tame elephants, bearing their riders, entered. One had been doing good service in captivity for over a hundred years. The other elephant, named Siribeddi, was about fifty years of age.

She entered the enclosure with a noiseless step, carrying two men on her back, and sauntered along with a simple air toward where the trapped elephants were. Every now and then she stopped to pluck a tuft of grass or a few leaves, as though she were engaged in the most ordinary work. The older elephant jogged innocently along behind. As the two tame elephants drew near, the wild ones advanced to meet them, and their leader put his trunk in a friendly way over the head of Siribeddi.

Siribeddi crept after him, and gave

the man with the noose a chance to slip down and put it over the other elephant's foot. He saw the danger, and shook off the rope; then he turned to make a furious attack upon the man, who would have been killed had not Siribeddi driven back the attacking elephant.

The herd again formed a circle, and the two tame elephants pushed their way into the middle of the group, one on each side of the largest male, so that the three stood abreast. The male made no resistance, but showed his uneasiness by shifting from foot to foot. The man with the noose now crept up, and, waiting until the ele-

phant lifted a hind foot, drew the rope tightly round it. The other end of the rope was fastened to Siribeddi's collar. When the noose had been fixed, Siribeddi instantly drew back, dragging the elephant with her. The old elephant followed.

The wild elephant had to be drawn backwards for fully thirty yards, struggling and plunging all the way. But Siri-

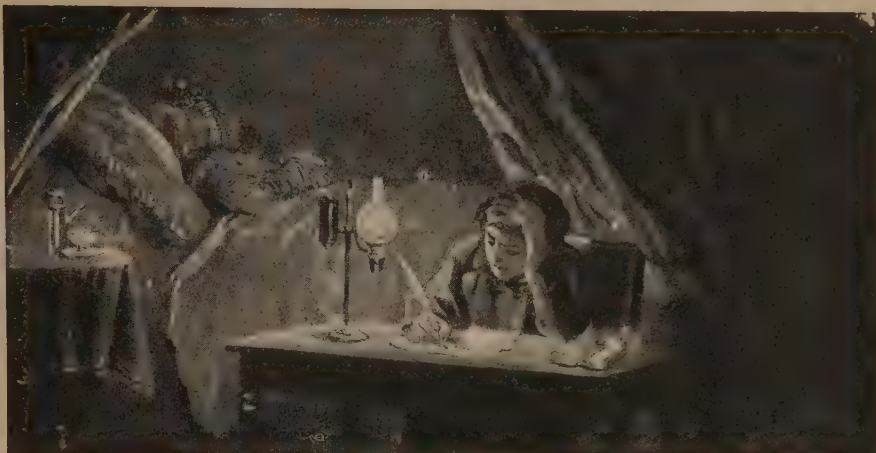
beddi knew her business. She walked round and round a tree, winding the rope round it, all the time holding it tight. With all her strength she could not draw the elephant close up to the tree, so the old elephant now approached, and facing him, head to head and shoulder to shoulder, forced him backwards. At every step Siribeddi drew in the slackened rope, and finally brought the wild elephant to the very foot of the tree. Then the man tied the second hind leg to the tree, after which the tame elephants placed themselves on each side of him, so the man could creep down and draw a rope round his fore feet, and he was a prisoner.

CONTINUED ON PAGE 6265.



A HERD OF CAPTURED WILD ELEPHANTS

Photograph copyright by Underwood & Underwood



Victor Hugo as a boy, writing an ode as he watches at night by his sick mother's bedside

CONTINUED FROM PAGE 6130.

VICTOR HUGO, A KING OF MEN HATER OF TYRANTS AND LOVER OF CHILDREN

ONE of the great men of the time when our fathers were boys was Victor Hugo, the man with a mighty brain and a tender heart, who stamped his name for ever upon the memory of mankind. Let our first picture of him be that strange scene when he defended his own son.

Victor Hugo's son Charles had just as great a horror of suffering as his father, and so, when an execution in France, attended by distressing scenes, took place, the son wrote a stinging article of protest in a newspaper about it. The police locked him up for it, and he was put on trial. His father appeared at the trial, and defended him.

"The real culprit in this matter, if there is a culprit," said Victor Hugo, "is not my son. It is I myself, who, for a quarter of a century, have not ceased to battle against all forms of the irreparable penalty—I, who have never ceased to advocate the sacredness of human life." It was a thrilling speech which the great man made, but his son was sent to prison for six months. Victor Hugo's pen was always at the serv-

ice of the criminal under sentence of death. He wrote to the British Government to save a man's life, he wrote to the Americans, he wrote to the Swiss Government. In the latter case he was successful, for the letter that he wrote was so powerful that Switzerland abolished capital punishment. With this thought of his battling for mercy, we may begin our story of Hugo's life.

Victor Marie Hugo was born at Besançon, France, on February 26, 1802. He came of a family which, long before, had been ennobled, but his father rose from the ranks, under Napoleon, to the position of general. Naturally he was a Republican. Hugo's mother, a dear, devoted woman, was a Royalist. The child inherited the strength and genius of both his parents, though he was a feeble child—so feeble, in fact, that at first it was thought that he could not possibly live. It was his mother's tender care which saved him, and he never forgot her great love, but celebrated it in after life in a beautiful poem.

Little Victor and his mother ac-

accompanied the military forces which his father led, and while he was still a tiny boy he travelled all over Italy on military expeditions, and once in an attack on some famous brigands. Then came two years of quiet study for the child under a good man named Lahorie, who had given offence to the Republican Government of France. Lahorie was captured and executed. The terrible event made a deep impression on the mind of the little Victor, and all his life he opposed this form of punishment. He turned for comfort to a sweet little maid named Adèle Foucher, of whom we shall hear later. His good mother blamed the French Government for the death of Lahorie, and the little boy came to believe that the execution was due to the form of government by which France was ruled. He, therefore, like his mother, became a Royalist.

General Hugo was a wise father as well as a good soldier;

moreover, he was a loving husband, and not jealous that the child should adopt the mother's outlook. "Let us leave all to time," he said. "The child shares the mother's views, the man will have the opinions of his father." It was a true prophecy.

When he was nine years of age, Victor was sent by his father to a school in Spain, and there the genius of the child first blossomed. He began to write poetry at ten years of age. After

a year in Spain, Victor went back to Paris, and spent three happy years studying under his mother's direction.

Great and terrible things had been happening in France. Napoleon, after rising to almost incredible power, had been defeated and had been sent a prisoner to the Isle of Elba — where Victor had spent some time as a tiny boy. Napoleon escaped from Elba, and returned to France for three months. In that time the battle of Waterloo was

fought, and Napoleon was for ever overthrown. Had he not been beaten, we should probably never have heard of Victor Hugo. His father, thinking that war was to go on, as it had gone on for years before, decided that his son should be a soldier. Victor Hugo might have made a great general, but he would have been lost to literature.

After Waterloo Victor began to show his merit. Between the ages of thirteen and sixteen he proved himself one of the

most wonderful boys that ever lived. He wrote every form of poetry known — verses, odes, satires, poems, tragedies, elegies, idylls, imitations of ancient poets, translations from the classics; he wrote fables, stories, epigrams, acrostics, riddles, and even a comic opera. When he was fifteen he competed for the prize for poetry at the French Academy — the highest honour that a French poet can gain. The judges did not know what to do with



VICTOR HUGO AS A BOY, WITH HIS TUTOR

his poem. It was extraordinarily good; but they simply could not believe that it was the work of a boy of fifteen. The subject set was "The happiness derived from study in every situation of life"—a very big subject. But here was the poem, and said to be the work of a mere child. They could not believe it. Victor sent up his birth certificate, but the puzzled judges seemed afraid to give him the prize, but gave it to another older poet, and merely awarded little Victor honourable mention. But he gained three prizes from the academy of Toulouse, and at eighteen was made a member.

Victor had two brothers, and with their help he now founded a newspaper. When he was nineteen his first great grief came to him, in the death of his mother. There was only one being in the world who could comfort him, and again he turned to charming Adèle Foucher, who, in the following year, became his wife.

Hugo was only twenty; she was still younger. He had just published a book of poems, and received for it the sum of \$175. With careless generosity he spent the whole of it upon a cashmere shawl for his bride, of whose wedding trousseau it formed the only item of importance. In the following year he wrote a strange, strong book, called "Han of Iceland." It was a sort of fanciful story, bearing upon his life up to that time.

He was now launched on his literary career, which lasted sixty years and changed the character of literature in France. He led, others followed, in

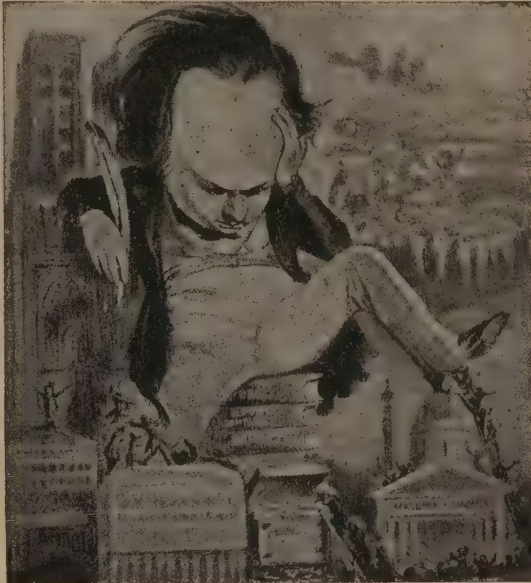
breaking away from the old school of poets and writers. The poets had clung to the modes of ancient times, so that their writing was artificial and unreal. Hugo threw over the old forms in which poetry was written. He adopted new styles, suited to the character of the subject. He wrote of Nature, of human nature, and all the circumstances of man's life, ambitions, trials, temptations, victories, and defeats. In his novels he made as great a change. Here, however, he followed Sir Walter Scott, who was the father of the romantic historical novel. In the plays that he wrote, Hugo introduced new ideas also, but these were less important.

No great change can be made without arousing strong opposition. Some of his plays were suppressed by the authorities. Others caused such violent quarrels between their admirers and the critics that free fights took place in the theatres at which the pieces were played. Duels were fought

over them, and in one a man was killed.

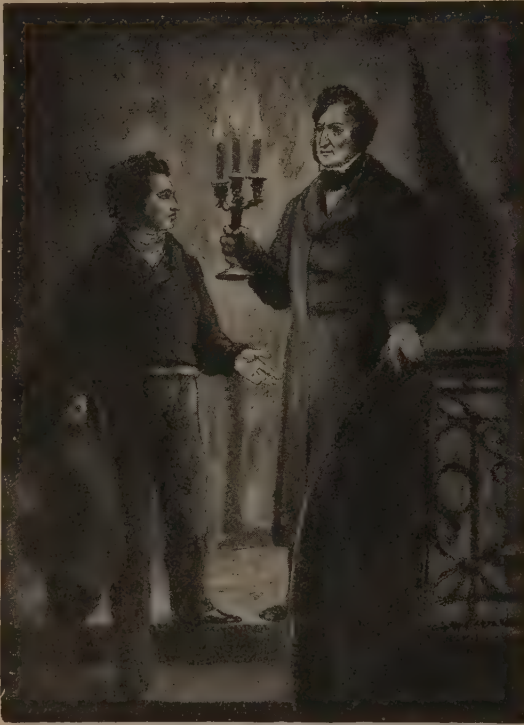
Hugo was not compelled to go on writing for the stage. Louis the Eighteenth had given him a small pension, so that he was not driven to write. Active as was his mind, even he felt at times indisposed to write; there were so many demands on his time. The day came, however, when it was necessary for him to tear himself away from the excitements of daily life. He entered into an agreement with a publisher to write a novel by a certain time. His way of doing it was remarkable.

He bought a thick grey worsted gar-



A FAMOUS CARICATURE OF VICTOR HUGO

He sits above Notre Dame, the theatres, and all the varied life of Paris, of which he wrote; and the publishers are shown pouring out their money at his feet.



VICTOR HUGO VISITING LOUIS PHILIPPE

The author often visited the king, who once, the servants having gone to bed, escorted him to the door

represent man's struggle in life with the forces opposed to him. The first shows the struggle against fanatical forms of religion; the second tells us of the terrible cruelty which civilisation may inflict; the third represents the everlasting struggle between man's will and the forces of Nature. The books are too deep for children.

Hugo passionately loved children. There is one of the most beautiful pictures of child life in his last great novel, "Ninety-three." It is a tale of 1793, a terrible year in the French Revolution, in which a war is in progress in the forests of La Vendée. In the forest there is an old castle, where are three lovely children, whose father is a marquis whom the revolutionaries intend to destroy. We see the little ones, happy, winsome little creatures, laughing and prattling at their innocent play, all unconscious of the horrors going on in the gloomy forest around their doomed home. Hugo paints in words a lovely picture of these three chil-

ment, which covered him from head to heels; he sent all his other clothes to be locked up. Then he bought a big bottle of ink, and set to work. Friends found him out, and would drop in to hear him read over what he had written. They thought little of his work, and he thought of calling it "The Contents of a Bottle of Ink." But what do you think that book was? It was "Notre Dame," which has become one of the most famous novels in the world. It is a book for grown-ups; it is too serious and grim and tragic for children, but it is a wonderful piece of work, making the Paris of old, old times live again.

Hugo grew to think better of this book, for in later years he wrote two more volumes to follow it. One is "Les Misérables," and the other is "Toilers of the Sea." Together the three



HUGO'S HOUSE ATTACKED BY COMMUNISTS
He had written vigorously condemning their deeds in Paris

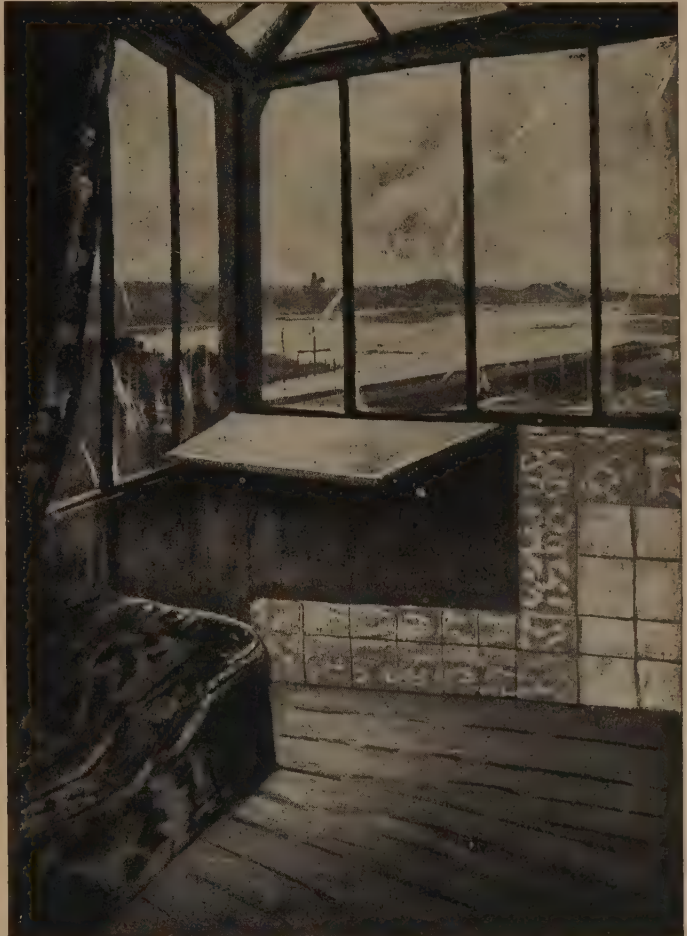
dren. Georgette, a sweet little girl of less than two years, scrambles from her cradle and prattles to a sunbeam. The great lover of children says:

"What a bird says in its song, a child says in its prattle. 'Tis the same hymn; a hymn indistinct, lisping, profound. The child has what the bird has not, the sombre human destiny in front of it. Hence the sadness of men as they listen, mingling with the joy of the little one as it sings. The sublimest canticle to be heard on earth is the stammering of the human soul on the lips of infancy. That confused chirruping of a thought, that is as yet no more than indistinct, has in it one knows not what sort of artless appeal to the eternal justice; or is it a mute protest uttered on the threshold before entering in, a protest meek and poignant? This ignorance smiling at the Infinite compromises all creation in the lot that shall fall to the weak, defenceless being. Ill, if it shall come, will be an abuse of confidence."

Only a man who loved and understood children could have written that. Hugo loved all mankind. He hated wrongdoing, and had no pity for the powerful who did evil. He was receiving a pension of \$200 a year from the king, and another pension of \$400 from the Government, but this did not prevent him from attacking the king. Charles X. lost the throne in 1830, but Hugo's pension went on. Upon this people said: "Ah, you abuse royalty, but you continue to draw the pension which was given you by royalty." Hugo answered: "I accepted the pension as a

tribute to my literary work, but, now that it is not so understood, I will never have it again." He was informed that the pension would be still at his disposal, but he always refused to accept the money.

The change which his father had predicted had now come about; Victor Hugo had become a Republican. In 1848 France drove another king—



A CORNER OF HUGO'S STUDY IN HIS GUERNSEY HOME
He wrote many of his famous books standing at the desk in this window

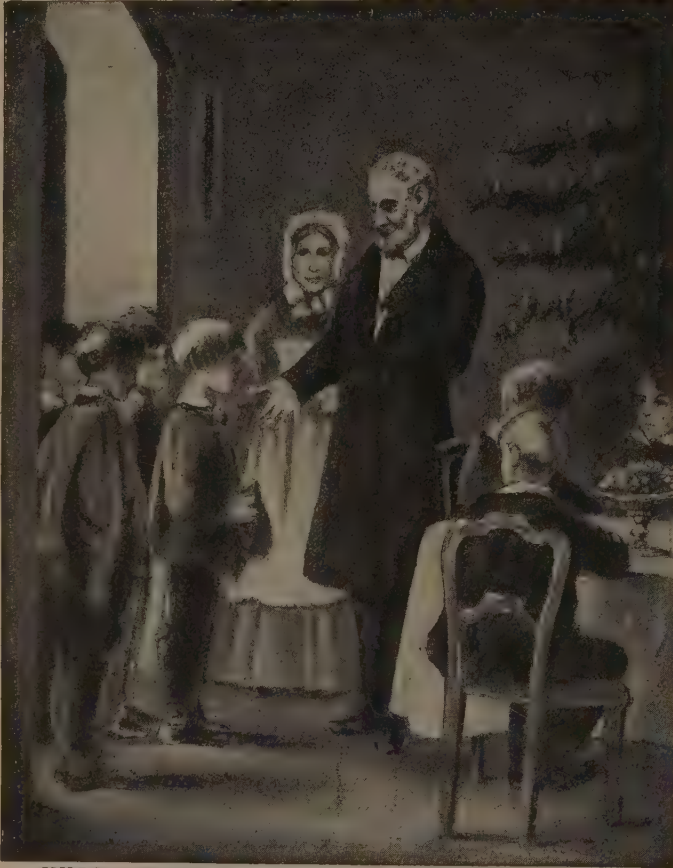
Louis Philippe — from her throne, and made herself a republic. Hugo spoke with ardour for Republican ideas. This brought him into conflict with Louis Napoleon, who had rushed to Paris, and got himself elected president of the new assembly. Louis Napoleon soon made himself emperor, as his uncle, Napoleon I., had done. Hugo was expelled from the country, and

wandered from place to place, among others to Jersey, and to Guernsey, where he spent a great many years.

During his exile some of his greatest works were written. The French invited him to return to his native land in 1859, and again ten years later. He refused to return so long as Napoleon III. reigned. His admirers said that, had Hugo returned to France in 1869,

a terrible illness. Still he was not left alone. Though he was the greatest writer and orator of France, he had many enemies, as such a man must always have. He retired into private life, and though he would occasionally write some powerful letter which would make all Europe talk, or appear in public to deliver some noble speech, he gave himself up mainly to his poetry, novels, and more serious writings.

With his surviving children and grandchildren he was happy and contented, always working and never weary. On his seventy-ninth birthday he was honoured as no king of France has been. More than 100,000 people, representing all classes of France, gathered in the Avenue d'Eylau, where he lived, to do him honour. All the most distinguished societies were represented, and in the midst of these great people a tiny girl, heading a procession of little children, was admitted to wish him many happy returns of the day. Victor Hugo died in May, 1885, mourned by the whole world. He is still beloved by grown-ups for the literary treasures that he left, and for his work.



HUGO ENTERTAINING POOR CHILDREN AT DINNER
Every week the author used to invite the poor children to his house

so great was his influence that he would have been able to avert the misgovernment and ruin which descended on the land. In 1870 came the war between France and Germany, the defeat of France, the capture of Napoleon, and his exile to England, where he died. The Germans were besieging Paris when Hugo returned.

Sorrows came upon Hugo. One of his daughters and her husband were drowned, and one of his sons died after

Children loved him because he loved them. They think of him playing with his beloved grandchildren Jeanne and Georges; of his feeding the poor children of Guernsey twice every week, of his masterly skill in getting up Christmas parties for children. The house in which he lived in Paris is now a museum, to which lovers of his works delight to go. There are portraits of his children and grandchildren on the walls.

CONTINUED ON PAGE 6275.

THE EXILE LOOKING TOWARDS HIS HOME



This striking painting shows Victor Hugo standing on the cliffs of the Island of Jersey, looking across the stormy sea towards the shores of his beloved France.

This picture, by M. Monchablon, is reproduced from a photograph by Messrs. Braun, Clement & Co.

A WONDERFUL NEW DREADNOUGHT



The growth of battleships goes steadily on. Here is a picture of one of the newer ships of the United States navy, the Utah. The Utah and her sister ship, the Florida, which were built not long ago, are among the largest battleships in the world. She is 521 1-2 feet in length, carries ten 50 caliber 12-inch guns and sixteen 50 caliber 5-inch guns, and has a speed of 21.8 knots an hour.



When we say that we see a man in the moon we mean that the shadows seen in the left picture look like the eyes, nose, and mouth of a man; but in the right picture, showing the moon through a telescope, our artist shows how we may get a much clearer image of a man in the moon by merely emphasising a few lines that really exist.

CONTINUED FROM PAGE 5062.

WHO IS THE MAN IN THE MOON?

FANCYING that we see faces or figures in the moon is rather like playing the game of pictures in the fire. At times we can certainly imagine that we see a great face in the moon, though we change as we grow older, and the writer of these words, who used to see the face very clearly when he was a child, has not seen it for many years—probably because he is looking for something else.

At any rate, there is no doubt that there are markings on the moon, and that in proportion to the moon's size they are very large, and many of them very high. We can prove that they are so by measuring the length of the shadows which they throw upon the moon's surface when the sun's light catches them sideways. These markings are partly what we must call mountains; they are partly, perhaps, in the nature of creeks, or clefts, and the most remarkable and beautiful of them look like craters of huge volcanoes. These are very large and have very high sides, as we can see when the sun shines sideways upon any of them. It is these

craters, above all, that help us to see the man in the moon, or the little old woman gathering sticks, or whatever else people have thought they could see there.

There remains, however, a deeply interesting question which astronomers are now studying keenly. Are these craters really craters, and was the moon's surface really once covered with gigantic volcanoes? Some argue that things are indeed what they seem on the surface of the moon, and that the volcanoes are so big because the moon is so small. That sounds curious, but the explanation is that the moon, being small, would cool very quickly, and if it cooled very quickly and shrank very quickly its volcanoes would all be on a big scale.

But other astronomers are beginning to say that perhaps these markings never were volcanoes at all. They argue that the moon has no atmosphere to act like a great protective blanket or like the armour-plate of a ship, as our atmosphere does, and that the effect of meteorites, or shooting stars, falling upon the

moon would therefore be very serious. They argue that, at a certain stage in the moon's history, when its surface was much softer than it is now, pieces of rock, or whatever we like to call them, flying about in space and striking the moon at a tremendous rate might produce those effects which we now imagine to be craters. If this is true, the "marks" are not really craters at all, but are mighty scars, or holes, punched in the moon.

HOW DOES A GYROSCOPE WORK?

A gyroscope is very like a top. Indeed, it is only a very heavy and carefully-made top. It usually takes the form of a wheel with a heavy metal rim, and this is held or enclosed in such a way that if it is set spinning it can do so freely. Of course, any spinning thing tends to slow down, owing to the resistance of the air, and the friction where it is supported — unless, like the earth, it does not spin on anything. So by various means a gyroscope may be made to go on spinning; and then we can observe its behaviour in all sorts of conditions.

It has been learned by men of science that mere motion will give resistance and force and all the properties of hardness and rigidity to things which had not these properties before. This is true of the gyroscope. Its spinning motion gives it the power to resist very firmly anything that tends to alter the direction of its spin. The heavier the gyroscope, the greater will be the amount of motion in it when it spins, and the greater its resistance to any force that tries to alter the direction of its motion.

Therefore, a railway carriage may run safely on a single rail without tilting over, simply because it carries a spinning gyroscope, spinning so fast and made so heavy that its tendency not to be disturbed or tilted will prevent the carriage from tilting.

WHY ARE CHILDREN FOND OF DOLLS?

Some people have said that children are not really fond of dolls because they are dolls, but simply because they are possessions. These people declare that the secret is to be found in the liking

which children have to possess things, just as grown-up people have the same liking, and that children will get quite as fond of anything that is theirs as of a doll.

But those who really know anything of children know a great deal better than this. They know that, as a rule, a child, at any rate during several years of its life, is far fonder of a doll than of anything else, and that the child is more pleased with the chance to nurse a real baby. So the truth is that the love of dolls is really the mother-instinct and the father-instinct showing themselves already, even in little girls and boys.

Often little boys are told that they should not play with dolls, but with soldiers. One little boy, who had not been taught such nonsense, had his doll out with him in the street, and some big boys cried out and jeered at him. But the little fellow had a good reply. He turned round and said, "None of you will ever be a good father."

WHY DOES A HEN CACKLE AFTER LAYING AN EGG?

Of course this is not an easy question to answer, for we cannot ask a hen why she cackles, and indeed, if she could speak, she could not give a reason; for this act, like many of our own, is not a reasonable one, but simply a consequence of the way in which a hen is made. It is what is called an instinctive action. Yet we can understand it because we can compare it with actions of other creatures about which there is no doubt.

The doing of anything which we were meant to do gives us pleasure. The bodies of living things are constructed in this way, as we might well expect. Now, pleasant feeling in ourselves and in other creatures often excites the body to some kind of activity, as when we say that a person sings for joy. When we feel very pleased with ourselves we want to sing, or whistle, or dance, or do some such thing. It is a question of what is called the expression of the emotions. A dog has the advantage of us in one respect, because it has a tail, and when a dog is pleased, it not only gives a special bark, which

is its way of singing for joy, but it also expresses its emotion by wagging its tail. On the other hand, an angry lion will sway its tail from side to side, and express its anger in that way.

So when the hen cackles after laying an egg, it is simply her way of singing for joy. Her body and her feelings have the satisfaction of having done something which her body is meant to do. It is probable that the actual laying of the egg causes discomfort, and there is a corresponding feeling of ease and satisfaction when the task is done.

WHAT ARE "BLIND-ALLEY" OCCUPATIONS?

A blind alley is a road along which one can go for a certain distance, and then no farther. We have to go back and make a fresh start, and we have lost all our time. And so we now give the name of "blind-alley" occupations — a name which every boy should know — to those which seem to offer a road to somewhere, but lead a boy nowhere, waste years which he can never regain, and perhaps even destroy his power to learn something better afterwards.

All who have studied the subject know how important this question is, and boys and girls should all be warned in time of the consequences of going into a "blind-alley" occupation. A boy leaves school at fourteen, and can at once get employment which brings in a few dollars a week, but which teaches him nothing. For instance, this may be the case with telegraph boys, as we all may see. After a few years, when the boy is beginning to become a man, and to expect a man's wages, he is, instead, turned off to make room for a younger boy. Since his "blind-alley" occupation has taught him nothing, and has only given him time to forget what he learned at school, he has to seek unskilled and poorly-paid labour, and often can get no work at all. Many scores of thousands of boys and girls in our country are now in these "blind-alley" occupations, and the time is come when we must put an end to a process which causes so much harm. It injures the boys and girls themselves, and it afterwards only too often makes

them a burden upon the nation, instead of part of its real wealth.

WHY CAN'T LIGHT TURN A CORNER?

There are several ways in which light can be made to turn a corner, but it is true, and it is one of the most important facts about light, that it naturally travels in straight lines. This does not mean that the light from a lamp travels only in one direction. It travels equally in straight lines in all directions, and since it is a property of light to travel in straight lines, of course it cannot turn a corner by itself.

But fortunately there are many ways in which light can be made to turn a corner, for there are many ways in which rays of light can be bent or turned. By means of a mirror, or any surface which reflects light at all, light can be made to turn a corner, or any number of corners, so long as at each there is placed a reflecting surface. In just the same way, of course, a ball can be made to turn a corner.

Light can also be readily made to turn a corner by what is called refraction. This is the name given to the bending of a ray which in passing from one thing to another, as from air to water, or air to glass, becomes, as it were, cracked.

WHAT IS A CYNIC?

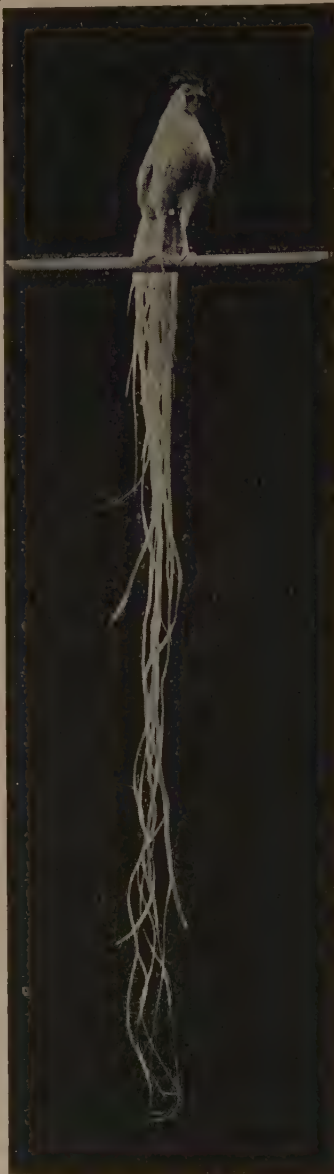
The word cynic is simply the Greek for *dog-like*, and means a person who has rather a snarling and dog-like kind of temper; at least, that is supposed to be the origin of the name. The great argument of the cynics in ancient Greece was that men must give up luxury and beauty, and even cleanliness, and any kind of decent human comfort. As we can imagine, they were not pleasant people, though it cannot be denied that they showed much courage and suffered much discomfort. One of the most famous of the cynics, pretending to be very humble, used to show himself in a cloak full of holes — a perfect instance of what has been called "the pride that apes humility." This particular cynic lived in the time of Socrates, who said to him, "I see your vanity peeping through the holes in your cloak."

WHICH IS THE BIRD WITH THE LONGEST TAIL?

We all know that the peacock's tail, which is so beautiful when opened out, is very long when it is closed up; but there are some birds in Japan that have tails as much as twelve feet long, and when they walk about in the open air special train-bearers support their tails, so that the feathers may not be dragged through the dust and dirt. These birds are a variety of the barndoor fowl. In the same way pouters and fantail pigeons have been developed in Europe from the common pigeon. The long-tailed cocks are reared at Shinowara, a village in the island of Shikoku. That they may not damage their tails they are kept in high, narrow cages, lighted at the top.

The bird naturally remains on the perch at the top, its tail hanging gracefully down. It is seldom allowed outside its cage, and then it walks in the open air for about half an hour, followed by its tail-bearer. Occasionally it is washed in warm water, and allowed to dry its feathers in the sun.

For travelling, special long, narrow boxes are used, and the feathers are bent as little as possible. The root of the tail in these birds is much stronger than it is in an ordinary cock. Even the feathers on either side of the body grow to an enormous length, and hang down with the tail feathers to a depth of three or four feet, so that the tail has the appearance of being not only very long but also very bushy.



A BIRD'S TAIL 12 FEET LONG

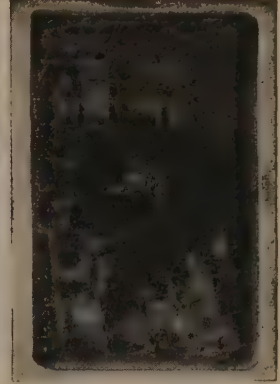
WHY DOES A LEVER MAKE A WEAK MAN STRONG?

In the case of all levers and pulleys the principle is the same. No form of lever or pulley makes power out of nothing. The secret lies somewhere in the special way in which the power is applied to the weight which it has to move.

If we think of a simple case of a man using a long iron rod to dislodge a piece of rock, by pressing the rod, near its lower end, against something firm, we shall see that the two ends of the lever—that is, the rod—move through very unequal distances in the same time. We can see this for ourselves by holding a pencil across the edge of anything, with nearly all the pencil on one side. Then, if we tilt it up and down, one end moves through a very much smaller distance than the other in the same time. The more unequal the two arms of the pencil, the greater is the difference between the distance moved by the two ends of the pencil.

That is what happens when a man is levering up a stone. He has not strength enough to move the lower end of the lever by pressing there, but he can get the necessary movement there by spending his power over a greater distance at the top end of the lever.

Less power is required there, but it is required to act through a greater distance. So the work is done, and the law that power cannot come from nowhere holds good in this case as it does in all others, no matter if it does seem otherwise.



No man likes to meet a crocodile like this, but nobody fears to carry him in his pocket like this.

CONTINUED FROM PAGE 6112.

NOTHING LIKE LEATHER

STORED up in our popular proverbs is a vast amount of truth and sense, based upon the experience of men who have lived in all ages of the world's history.

According to one of these proverbs, "there is nothing like leather," and although we do not know who first made that statement, we do know that it is true. There is nothing like leather, and, though clever men have worked hard to invent a substitute for leather, they have not been very successful. The demand is ever growing and has always exceeded the supply. It comes from the skins of animals, and every bit of leather in the world was once alive.

Leather-dressing was one of the most important trades among the ancient Egyptians, and at Thebes, in the days of Egypt's glory, a special quarter of the city was set apart for the tanners. So great was the demand for leather that Egypt itself could not provide enough skins. One of the forms of tribute exacted from conquered nations was a number of skins, to be delivered every year for the making of leather by the skilled Egyptian tanners. In our museums we can see to-day splendidly preserved leather straps and belts used

for binding round the mummies of men who lived far back in the days of Solomon. The mummies themselves, as they were carried to burial, were often covered with a pall or canopy of soft leather, dyed a delicate blue. The Egyptians used leather for making sandals, braces, belts, bags, shields, harness, sails, cushions, and chair-seats. From them the Israelites learnt the art of tanning, and, although the word leather occurs in the Bible only twice, there are many references to skins, which clearly mean leather.

The Greeks and Romans made leather, and indeed it is difficult to find any nation, ancient or modern, civilised or uncivilised, to whom leather has not been known. The most extraordinary things have been made of it. The Romans at one time had coins of leather, and some of the early cannon were made of leather.

In the making of leather from the rough skins of animals different processes are used, but they are all based upon the same principle, and are very similar. It is curious to know that the methods used by the Egyptians three thousand years ago are very much like the methods used to-day. Whereas in most other industries modern science and invention have

completely transformed the processes of manufacture, and made it possible to do in a tenth of the time, and with a better result, work that was formerly done by hand, in the tanning of hides and skins it has not been possible to hasten and improve the process so much.

AN OLD MYSTERY EXPLAINED

The animals whose skins make the best leather are those living in hilly and mountainous countries, where they are exposed to great changes in temperature. They become hardy, and their skins are very tough. The skins of the big, fat cattle that we see in shows are of very little use for leather. Young animals provide better leather than old ones.

Before they can be made into leather the skins must be treated with lime, and a curious fact is that the lime used must have been used before for other skins. It was once thought that the lime itself, by some chemical action, loosened the hair. As a matter of fact, fresh lime tightens the hair in the skin. The old lime, owing to its contact with former skins, is full of bacteria, the tiny creatures that we can see only through a very powerful microscope, and these bacteria make their way down into the epidermis, destroying the roots of the hairs so that they come away easily. This fact explains for the first time the why and wherefore of a process that has been known and used for thousands of years.

THE ANIMALS THAT GIVE US LEATHER

The skin of any animal can be tanned but the main sources of our leather supply are the oxen, sheep, goats, and pigs. A good deal of leather is now made from the skins of seals—not the fur seals, but the seals caught in the Atlantic Ocean.

The skins of crocodiles, lizards, snakes, and frogs are tanned for making small bags, pocket-book covers, and letter-cases. They are too horny for other purposes.

Horse-skin provides an excellent leather, much used for the boots of

sailors and fishermen, because it is exceptionally waterproof. Porpoise leather is really made from the white whale, and is very strong. Elephant, rhinoceros, and hippopotamus hides make a very heavy and thick leather. The skins of sharks, buffaloes, antelopes, deer, kangaroos, wallabies, donkeys, and chamois are all tanned, but the supply is too small to make these animals of much commercial importance.

And this reminds us that the world is less and less able to get enough leather for its needs. Leather is what is known as a by-product—that is to say, the animals are reared and killed, not for their skins, but for their flesh; and as the skins happen to be there, they are used for making leather. But it would never pay to rear animals simply for their skins.

WHAT WILL THE WORLD DO FOR LEATHER?

During the last twelve or fifteen years the price of some leathers has doubled, and other kinds cost half as much again as a dozen years ago. The uses of leather have increased also until we count them in hundreds. Leather is used for the great belts that drive our big machinery, and for the small buttons on a boy's coat; it is used for upholstering a motor-car or a carriage, and for making a purse or a watch-guard. The coming of motor-cars has greatly increased the demand, and many people of other lands who used to wear wicker sandals or wooden sabots now wear leather boots and shoes. So that far more leather is being asked for than can be produced.

The leather comes from animals that are killed for food; but people are now eating less meat than they used to eat, and the increase of vegetarianism and fruit diets is still further limiting the supply of leather. What is the world going to do for its leather in future? No one can say, but we know that as the demand increases, boots and shoes, balls, bags, book-bindings, motor-cars, belts, harness and saddles, purses, and a hundred other things made of leather, will become dearer.

CONTINUED ON PAGE 6203.

THE VERY BEGINNING OF BOOTS AND SHOES

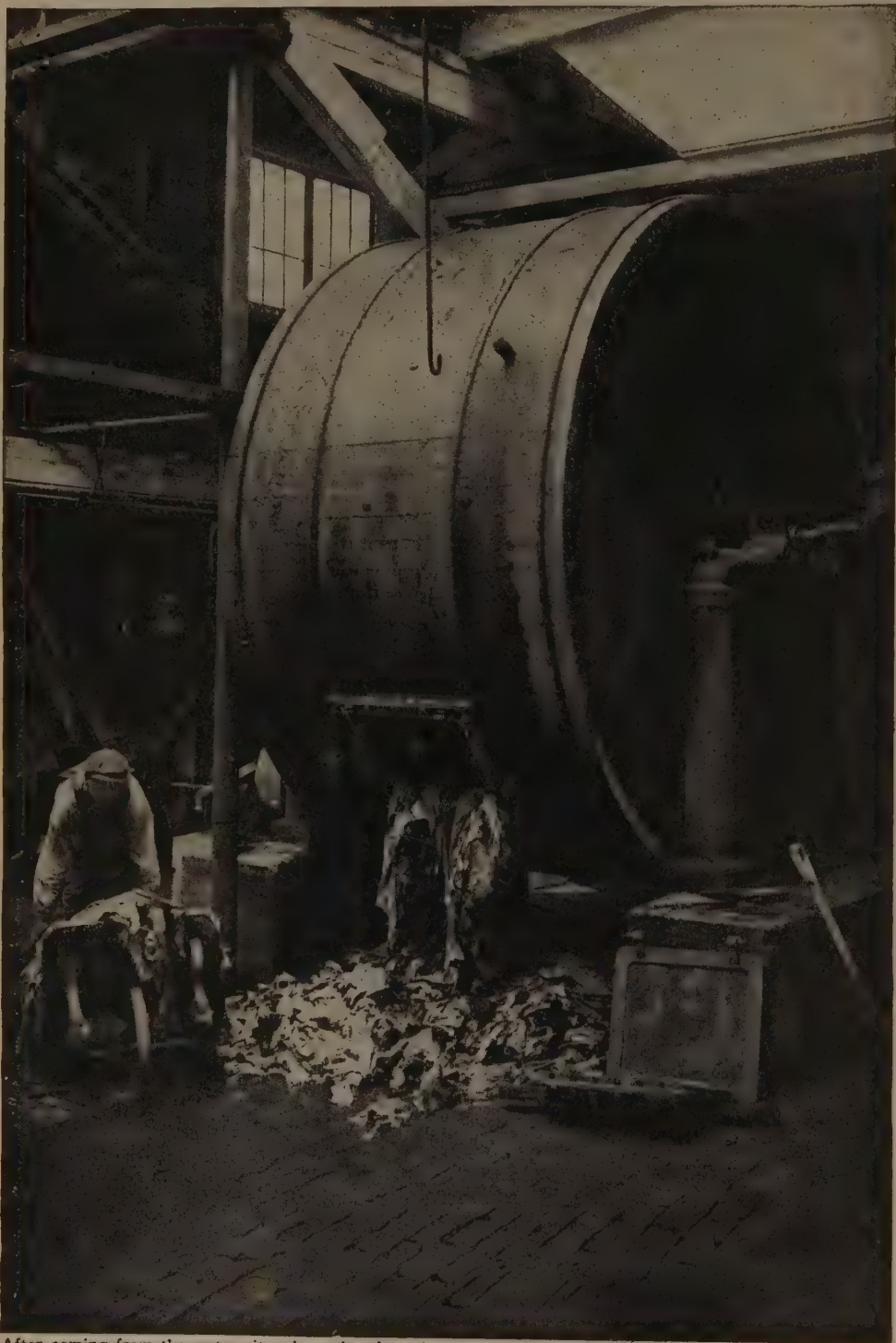


The making of leather from skins of animals is an industry of ever-increasing importance. Here we see the well-equipped laboratory of a modern tannery, where chemists test the solutions used in tanning.



In addition to the skins of animals killed for food, large quantities of dried and salted skins come from abroad. They are first of all, as shown, put into pits of water containing chemicals to make them soft.

THE BIG DRUM AT THE LEATHER WORKS



After coming from the water-pits where they have been soaked, sometimes for days, the skins are put into a revolving drum, like that in picture, which contains chemicals, and here they are still further softened.

PREPARING THE SURFACE OF THE SKINS



It is necessary to remove the hair from the skins before they can be tanned, and to do this they are laid out on the ground, and covered with a mixture of lime, and then folded up and placed in pits for a time.



After the hair has been loosened by immersion in lime-pits, the skins are laid on boards, and the hairs and outer skin are scraped off with knives. This work needs skill. A man can unhair about 250 skins a day.

THE HAIR OF WHICH CLOTHES ARE MADE



The hair that is scraped off goat-skins is collected and passed through this machine, which dries it. It is then sent to the factories to be made into cloth for cheap clothes. Good goat-hair realises a good price.



The skins now pass through several processes of cleaning before being tanned. The machine in this picture takes all dirt out of skin, and removes any hairs that remain. It will clean about 3,600 skins a day.

HOW THE SKINS ARE TANNED INTO LEATHER



After cleansing, the skins are ready for tanning, in which processes vary. Pictures on this page show chrome tanning. It produces the strongest leathers. Here skins are being taken out of a drum of acid.



These men are putting the skins that came out of the drum into a second tanning bath. It will be seen that most of the men wear gloves. This is for protection, as the acid causes serious wounds.

SHAVING THE SKINS TO ONE THICKNESS



After being tanned, each skin is made of the same thickness; this machine shaves off all inequalities. It has to be worked carefully or skins would be damaged. The machine shaves nearly 1,000 skins a day.



Other processes follow, and the skins are then oiled. This helps to make them waterproof. They are next placed in ovens. In many of the processes no satisfactory machinery has yet been invented.

PREPARING TO GLAZE THE LEATHER



The skins, having been dried, are damped again by being packed in wet sawdust. These youths are very quick at the work, and can pack away as many as several thousand skins a day in the sawdust baths.



The next process is to pass the skins through a staking machine like those in this picture. The skins go through the machine twice, and, as a result, are rendered soft and pliable, and have the stretch taken out.



The leather is dyed, and before it can be glazed it must have one or more coats of seasoning mixture put on to make it take the glaze, and that is what these girls are doing. Women do this better than men.

"THE FIRST SHINE ON A PAIR OF BOOTS"



In the left-hand picture a skin of leather is being glazed by a machine which runs a glass cylinder over it very rapidly, giving "the first shine on a pair of boots." On the right the skin is being trimmed.

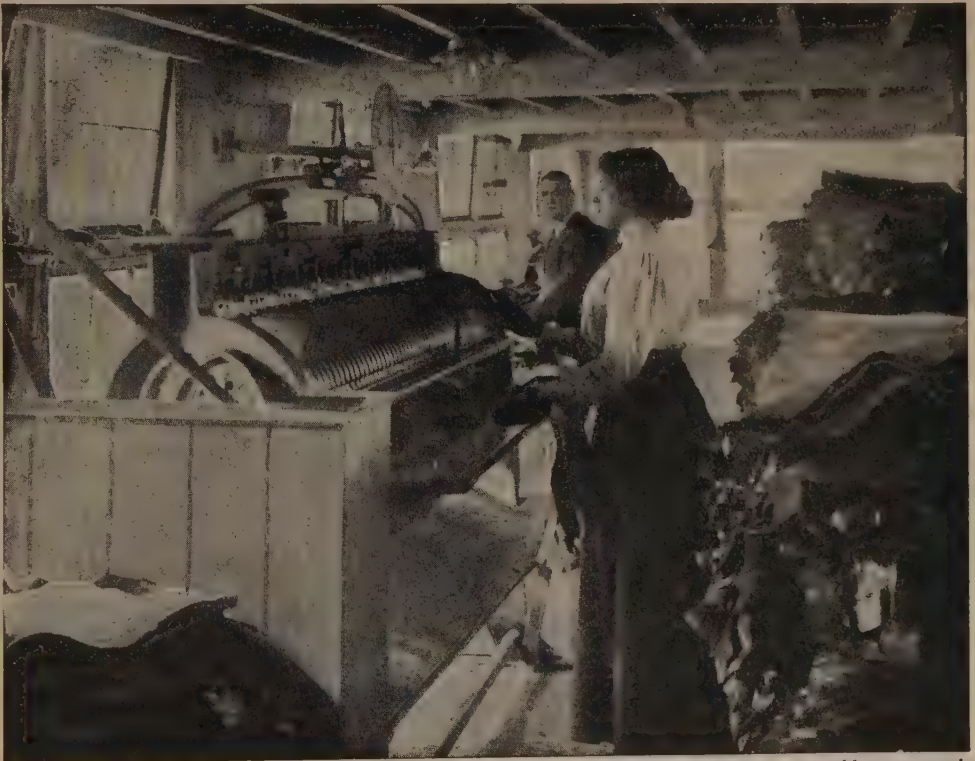


Here the finished skins are being sorted according to their substance or weight. This work demands skill and knowledge of leather, and every man who attempts it must be a thorough expert at his trade.

THE MACHINE THAT MEASURES THE SKINS



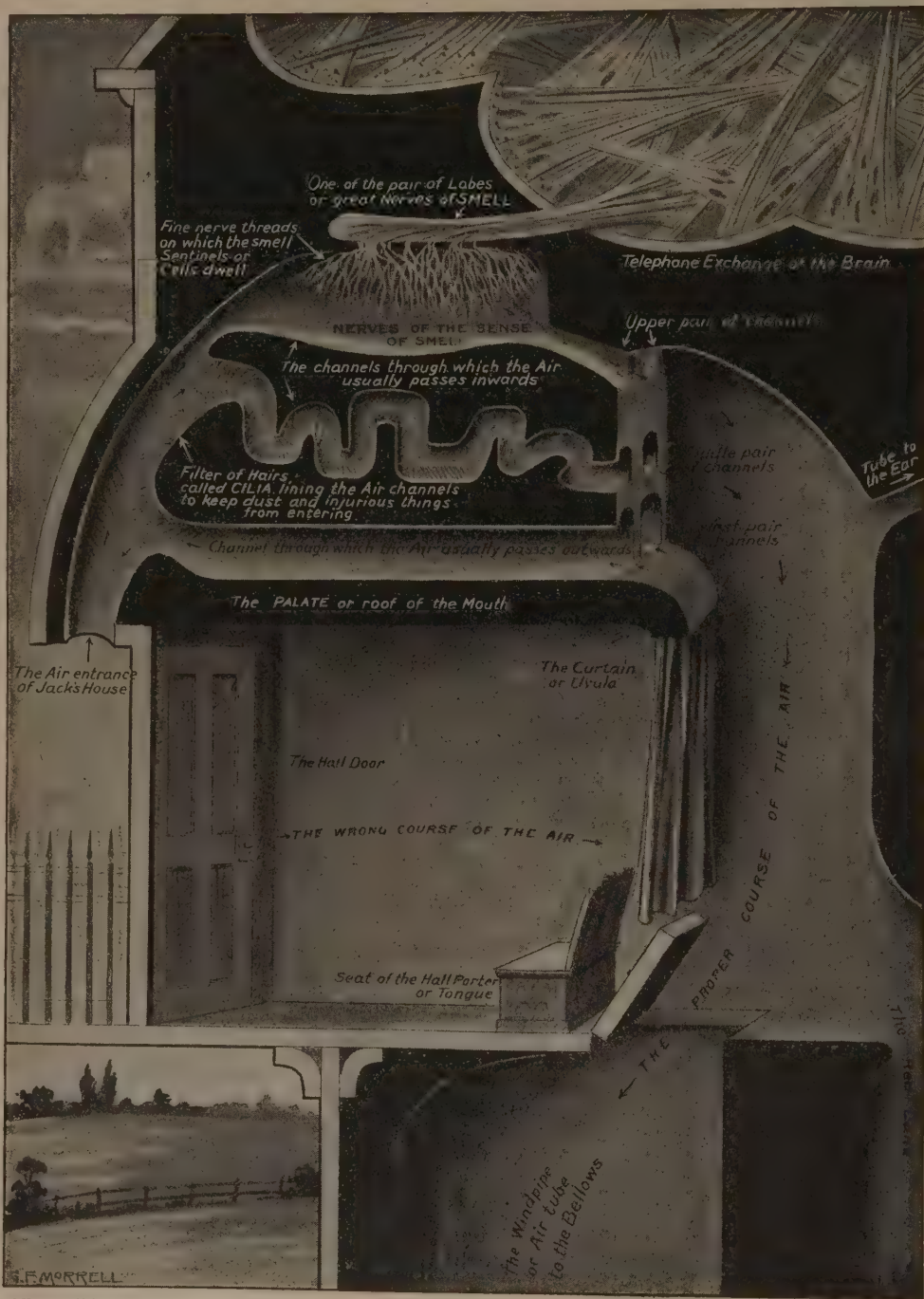
The skins are sorted according to colour, and as the shades vary the work of sorting is one that needs a skilled eye, and has to be done by the aid of a north light—that is, before a window that faces north.



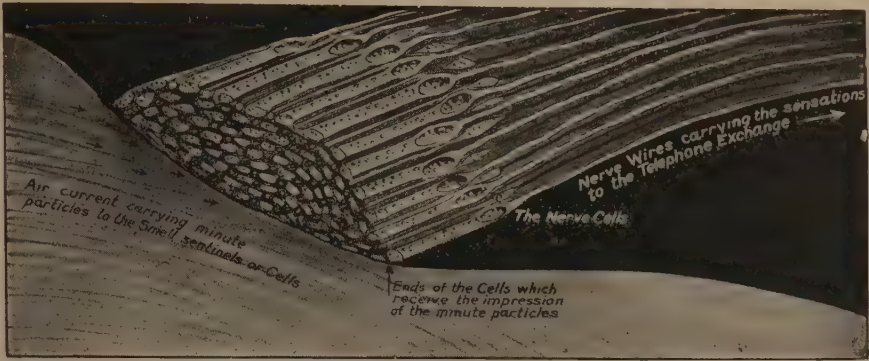
Before being passed to the warehouse for sale, the skins must be measured, as they are sold at so much per foot. This is done by the machine shown here, which measures more than two thousand skins a day.

CONTINUED ON PAGE 6203.

WHY WE MUST BREATHE THROUGH THE NOSE



All sensible people breathe through the nose and not the mouth, and this picture shows why. The little hairs lining the channels of the nose act as a filter, keeping back dust and other harmful things, and the value of this filter is lost if we breathe through the mouth, where dust and germs have free entrance into the lungs. This picture shows also the little cells which enable us to smell. When we smell a thing, small parts of it break away and touch the cells which live on the nerves of smell, and these cells can detect a particle of musk that weighs only a thirty-millionth of a grain, the sense of smell being more acute even than the eye aided by the microscope.



This picture gives an idea of the nerve-cells of smell, lining the upper part of the nose. When we smell a rose a small particle of the rose is drawn to these cells, and the sensation is carried by the nerves to the brain, which recognises it.

CONTINUED FROM PAGE 6094.

JACK'S FRESH AIR SUPPLY

IF the Architect of Jack's house had forgotten to provide for its proper ventilation the house could never have been built at all. The pity is that men are allowed to build any kind of houses without providing for the breath of life to flow through them; for Jack's house has to spend much of its time in houses built by men, and if they are not ventilated half the value of his own ventilation system is lost.

Jack's house needs air in order that his countless living servants may breathe. If we had said *burn* instead of *breathe*, that would have been an equally true saying, for we may look upon Jack's house as a wonderful furnace, which requires a draught of air if it is to burn properly. The fuel which Jack eats, and which his chemists cook so skilfully, would be of no use to Jack unless he had a supply of air to burn it with.

Burning means combining with air, and this goes on everywhere all through Jack's house, and all through the houses of all living creatures, animals, or plants, whether they live in the air or at the bottom of the sea. Therefore all living things require and have a ventilation system.

The centre of Jack's ventilation

system is Jack's middle story, where are his bellows and his pump. But we must begin at the beginning, and we find that the air enters Jack's house through a special channel just above his front door.

The whole of the outside of Jack's body is more or less exposed to the air, but none ever enters through his skin, though a little does enter through the walls of ordinary houses. The living houses of some animals and plants are ventilated more or less through their walls. A plant breathes all over its surface, and a frog breathes partly by its skin. But Jack depends for his air supply entirely upon what enters his windpipe, the great air tube that runs down his neck into his chest, and if he cannot receive enough air through that tube he will die.

Jack's mouth, or hall, and his nose both lead to his windpipe, and air can reach it either through his hall door or through the two holes above it called his nostrils. If Jack runs hard, or swims hard, or if he has a cold, he is bound to open his hall door, and get air that way, but as a general rule air should not be admitted through the hall at all. Unless Jack has something to say, or something to swallow, his hall door

should be shut. The Bible rightly says that God put the breath of man's life *in his nostrils*, not in his mouth; and, indeed, Jack may well remember this very good rule — *Shut your mouth and save your life*.

It is true that it feels easier to breathe through the mouth than through the nose. Why, then, should the mouth not be used, and why is it actually dangerous to allow the hall door to be constantly open for ventilation?

Well, it is dangerous for many reasons, but one of them is easy to guess, for it is the very reason which often prevents us from opening our hall doors. Burglars may get in; and if Jack keeps his hall door open burglars will get in there too — microbe burglars which may smash and destroy his house. There are several other reasons, but we cannot understand them until we study those openings, and what is behind them.

THE IMPORTANCE OF THINGS YOU MAY NEVER HAVE THOUGHT OF

If we look at our nostrils we shall usually notice a number of fine hairs. They act as if they were a kind of grating or sieve, keeping back tiny flies or specks of dirt which might otherwise enter with the draught of air. Now, from the two nostrils right onwards until the air reaches the great lungs, or bellows, themselves, it has to pass one thing after another which, though we cannot see it or understand it so easily, plays exactly the part of those hairs.

When we study the inside of the nose, we find that it has various channels from the nostrils to the back of the throat, and instead of being straight they are most crooked and twisted, so that the air can never flow through the nose without striking against the inside of it, and having to go round corners. The inside of the nose is moist, and can readily be made more moist whenever the air is rather dry or cold. The nerves that govern the blood-vessels inside the nose see to that. Thus, not only is the nose crooked and moist, but it is also warm. Nor is that all. The moisture produced inside the nose by the chemists lining its walls is distinctly

poisonous to microbes. It is to some extent an antiseptic, like carbolic acid, or the acid which poisons microbes in the food when they reach Jack's great oven.

What all this means we can only learn by very carefully catching some of the air which has been through Jack's nose, just before it reaches his windpipe, and comparing it with the air before Jack began to breathe it.

THE FILTER THAT SURPRISES THE CLEVEREST BUILDERS

If we do this — as we can do in a very wonderful way — we discover that Jack's nose is the filter of his ventilation system — a filter which does everything that can be done by the cleverest human builders, and vastly more. We can best prepare ourselves to understand and value this filter rightly by taking the best specimens of air-filters made by men.

At a well-known hospital there are rooms for performing surgical operations. All the air which enters them does so through a special shaft, which it can only reach by passing through a filter. Now, this air-filter is made of a great screen of hanging cocoanut fibres, down which water is always dripping. As the air passes between these dripping fibres, it is filtered of dust and microbes to a large extent, and is also moistened. If the water were warmed, the air would also be warmed by the filter. Then a fan drives it down the shaft and into the rooms, and there the people who breathe it all filter it again, if they are wise and well, by breathing through their noses.

HOW THE AIR WE BREATHE IS CLEARED AND MOISTENED

The nose is the great air-filter of Jack's house, and it does just what the filter does in those beautiful rooms. But the nose is a better filter than anything man can make, and it does more for Jack's house than the cocoanut fibres and the dripping water can do.

For when we compare the air taken from the back of Jack's nose with the air outside, we find, first, that the inside air contains no microbes at all, and practically no dust, except of the very tiniest kind; and we find, next, that it

is moistened, containing much more water-vapour than it did before; then we find, again, that it is warmed, for it has passed over a large surface lined with plenty of warm blood.

How wondrously this filter of Jack's excels all the filters made by men we shall see. To begin with, not only has air to enter through this filter, but it also has to return by it.

THE AIR THAT TRAVELS ROUND CORNERS AND THROUGH CHANNELS

No human builder can make such an arrangement as this. He must always have an inlet shaft, where the filter is, and an outlet shaft. At the hospital the inlet shaft sends the air straight to the patient's place, and the outlet shaft is near where the lookers-on are, so that nothing can travel against the stream of air from them to hurt him. But in Jack's house the inlet shaft and the outlet shaft are one and the same, which is unlike any other system of ventilation in the world.

Now, the inlet has purposely been made difficult so that the air may be filtered and moistened and warmed. It has to flow round corners and through narrow places, but it would be an inconvenience if the air had to do this in coming out. Therefore the lowest of the three channels which we find inside the nose on each side is practically straight and short; and we have discovered that practically all the air, on going in, travels through the middle and the upper pair of channels; but practically all, on coming out, travels by the lower pair of channels, though one pair of nostrils suffices for both purposes.

THINGS THAT WE NOTICE ON A VERY COLD DAY

This is really a beautiful discovery, for when first we study the shape of the inside of Jack's nose we cannot understand why the two upper pairs of channels should be so crooked and narrow, if the lower pair could let the air in. The fact is that, though the lower pair is open all the time, it and the others are just so placed that the indraught is almost entirely through them, and the out-draught almost entirely through it. Further, if the upper and

middle pair of channels are blocked, which too often happens, the lower pair still remains, and the air will do better to enter through them than through the mouth.

Indeed, this is an adaptable filter in every way. When the air is warm and moist, it is allowed to pass quickly and easily through the filter; but when it is cold and dry, and would do harm inside Jack's house, it is compelled to pass more slowly, and is exposed to more warmth and more moisture.

This beautiful arrangement is worked by those servants of Jack who sit in his upper story, and control, by nerves, the size of every blood-vessel in his body. When they get messages saying that the air is rather too dry and cold, they give orders to flood the lining of his nose with warm blood, by relaxing the walls of all the blood-vessels inside it.

THE FILTER THAT POISONS ITS ENEMIES

In order that this shall be effective, we find that the lining of Jack's nose is extremely loose on the bony walls, and so it can be stretched and filled with a great quantity of blood whenever it is feared that Jack is being supplied with air so cold and dry that it would injure the inside of his bellows.

We have seen that the inside of this filter produces something that poisons many microbes. When we blow our noses—which we should do more respectfully after learning what our noses are!—we clear the filter of a mixture of dirt, dust, and microbes; and if we consider how soon a used handkerchief becomes unpleasant, we realise what might happen to our lungs if we had no filter to breathe through.

But if we examine the lining of this filter with a microscope, we find still more wonders such as no other filter can show. Nearly the whole of its surface is covered with tiny living servants of Jack—cells which produce a steady flow of moisture to purify the air. These cells have a sort of hairs—called *cilia*, which is Latin for eyelashes—sticking out from them into the air-channel. These cilia are a sort of broom, which the cells that bear them keep brushing in one direction, so as to

keep the filter clean. Their action goes on night and day.

These ciliated cells line the whole of Jack's ventilating shaft, from the nostrils down to the bellows, or lungs, themselves. When Jack has a "cold," and especially when he has bronchitis, he loses the services of these excellent servants for a time, for multitudes of them are killed by the microbes that make Jack ill. Not until new ones take their place is Jack quite comfortable. One other interesting fact about these cells is that, like the white cells of the blood, which have wonderful powers of movement also, they are independent of Jack's officials in his upper story. No nerves order them about, and they move as they know they should, on their own account.

Very different are the cells which line one special part of Jack's nose, just where the incoming current is strongest. They are not merely connected with nerves, but are themselves nerve-cells.

THE SERVANTS WHICH GIVE JACK THE SMELL OF A ROSE

These servants of Jack are of a far higher kind than the cells which wave their cilia. They do not show, under the microscope, anything so wonderful as the "ciliary movement" of the other cells, but their power of feeling is really far higher and far more wonderful. When certain gases or particles of material come in Jack's air-current and reach these sentinels, they are known and recognised as good or bad, or as not mattering one way or the other; and this smelling, as we call it, is done by the smell-sentinels in Jack's nose, together with a special part of his brain, with a special kind of nerve-cells, which are experts at smelling, and can communicate with every other part of Jack's brain.

As a matter of fact, Jack's house is far from being as well supplied in this respect as the house of his dog. In human beings, the sense of smell has lost most of its importance, and the marvellous sentinels for seeing and hearing have taken the place of smell for most purposes—such as recognising Jack's friends and enemies.

Nevertheless, these sentinels that line

the upper part of the air-filter are not to be despised, even though they are stupid in comparison with the smell-sentinels of many animals.

SENTINELS THAT MAY SAVE JACK'S LIFE

These little servants can still recognise many bad things. For instance, if the gas has not been properly turned off at night, Jack's sentinels tell him that it is escaping, for they recognise some of it in the air-current which passes them. But for this warning Jack might go on breathing the gas until it overcame the unsleeping cells that govern his bellows, and he would stop breathing for ever.

Also these sentinels give Jack much pleasure in the sweet scents of flowers in the country; and they are very useful in helping him to enjoy his food, for the scent of his food gets into his nose, and, indeed, a good deal of what he calls the taste of his food is not really taste at all, and should go, not to the credit of his hall-porter, but to that of the sentinels in his nose. The best proof of this is that Jack has a very dull taste of food when he has a cold, and the smell sentinels are drowned in fluid for a time, so that the smell of the food cannot reach them.

THE LITTLE TUBE OF AIR THAT HELPS US TO HEAR SOUNDS

Lastly, from each side of this filter there runs a tube which carries a little air to the inside of Jack's ear, so that there is air inside as well as outside Jack's ear-drums, and sounds can move them freely. This is called the Eustachian tube.

Such is Jack's filter. If it is not in good working order—as when part of the lining is overgrown and he has *adenoids*—he becomes a "mouth-breather," and suffers in many ways. No one can afford not to use this living filter, which stands at the beginning of the ventilation system, and without which Jack's house can never be as clean and habitable and durable as it should be. Yet most of us, when we talk of Jack's nose, mean the mere outside of this most perfect, most skilful, and most beautiful filter in the world.

CONTINUED ON PAGE 6251.

WHAT THIS STORY TELLS US

OUR forefathers travelled very little except when moving their homes. Many men and women lived their lives without ever going a hundred miles from the spot where they were born. Now people do not hesitate to go around the world for a vacation trip. However, as a larger and larger part of the people live in cities, many prefer to seek for their vacation scenes out of the ordinary. For the city-dweller Canada furnishes many new sensations. In the United States civilisation has reduced the wilderness to a comparatively small area. In Canada the population has been too small to do this as yet. Besides the works of Nature, man has done much that is interesting in this wonderful country.

THE AMERICAN TOURIST IN CANADA

THE summer season is regarded by many Americans as the bright spot in the year, when, for a brief space, the cares of business or professions are laid aside and life is given up to enjoyment. The increased facilities of travel make it more difficult every year to determine which place will prove the more enjoyable. During the past few years, Canada has been attracting more and more attention as a favourite summer resort for tourists from all parts of the world, and more especially from the United States. Every year finds Americans flocking in greater numbers to enjoy their vacation amid Canadian scenes. Time will only permit mention of a few of the numerous attractions that draw so many visitors to Canada.

KINGSTON, THE LIMESTONE CITY

A favourite place of entry for tourists is Kingston. The city is beautifully situated at the foot of Lake Ontario and at the head of the River St. Lawrence. It is a quaint, attractive place full of historic interest. It was once the seat of government. Kingston is the seat of the Royal Military College, Canada's West Point, and of Queen's University, an institution ranking with Toronto University and McGill. The massive grey stone forts, the Martello towers and the imposing public buildings all make the city

very attractive. A steamer leaves daily for the Thousand Islands, Montreal and Quebec.

THE THOUSAND ISLANDS

The islands commence near Kingston and extend to Brockville, a distance of fifty miles. They number in all about seventeen hundred and present to the view of the passing traveller everything conceivable in the way of an island from a bare rock a yard across to an island covering many acres. They have already been described on page 5425. From Prescott to Montreal the trip is exciting and interesting. "Shooting the rapids," as the descent by boat is called, is a most exciting experience. Before us is a seething mass of churning waters, rushing with headlong speed down the rapids, which stretch ahead apparently without termination. Each moment we feel ourselves being further drawn into the mighty current and cannot help shuddering as the ship rushes at threatening rocks, but the skilful hand of the helmsman turns the boat aside and the rocks are passed without harm. The roar of the surges and the foaming spray that dashes over the boat intensifies the excitement caused by the swift undulating movement. Sweeping beneath the great Victoria Jubilee Bridge we come in full view of the city of Montreal, the commercial metropolis of Canada.

Copyright, 1912, by the Grolier Society.

MONTREAL AND QUEBEC

Montreal, the largest city, and the chief commercial centre, of Canada, attracts thousands of visitors. In beauty of location and in natural advantages Montreal is preëminent. It is not only the largest city in Canada but one of the financial centres of America. The city is the seat of McGill University, one of the leading institutions of learning in America, ranking with Johns Hopkins in medicine and with Columbia in science. There are many other colleges. The most important is Laval, a branch of the parent university at Quebec. In Quebec, Laval is to the French what McGill is to the English, and is one of the oldest institutions of learning in America, having been founded as a seminary in 1663, though, in its present form, it is much younger. From Montreal it is a night's sail to the historic city of Quebec, already shown on page 4100.

THE WASHINGTON OF THE NORTH

Steamers ply daily between Montreal and Ottawa, the capital of the Dominion of Canada. The city is beautifully situated on a high bluff overlooking Ottawa River. The government buildings, the chief attraction, form three sides of a vast quadrangle on an eminence one hundred and fifty feet above the river. A noted writer in describing them said that he knew of no Gothic purer of its kind or less sullied with fictitious ornaments and no site for such a set of buildings so happy as regards both beauty and grandeur. There are many other buildings of prominence, the chief of which are the Victoria Museum, the Canadian branch of the Royal Mint, and the University of Ottawa.

THE RIDEAU LAKES

The Rideau route from Ottawa to Kingston affords a trip of one hundred and twenty-five miles through the Rideau Lake region. This is an inland water course that is not surpassed for beauty and interesting features by any similar trip in Canada. The varied scenery, the refreshing climate and the

excellent hunting and fishing are attractions that appeal strongly to the lover of nature.

KINGSTON TO TORONTO, THE QUEEN CITY

Toronto may be reached by rail or by boat but the tourist is likely to prefer the latter. A boat leaves Kingston every afternoon and the next morning at seven the "Queen City" is reached. The waters of Lake Ontario are as clean and as pure as a mountain spring. The lake is remarkably free from storms and is in high favour with all pleasure seekers who enjoy a delightful water trip.

Toronto, the capital of Ontario, and the second city in the Dominion, is situated on a large sheltered bay between the rivers Don and Humber. Its name is derived from the Indian De-on-do meaning "place of meeting." The beautiful scenery, the picturesque parks, the handsome public buildings, the beautiful churches, colleges and residences make it very attractive to the visitor and it is becoming a popular summer resort. Toronto is famous as an educational centre. Besides Toronto University, there are several colleges, the most important of which are Victoria, Trinity, McMaster, Osgoode Hall, Knox, St. Michaels and Wycliffe.

NIAGARA FALLS

The chief point of interest in all Canada is the world's greatest cataract, Niagara Falls. Boats leave Toronto several times daily and it is a trip that every tourist should take. Niagara Falls are situated on the Niagara River, twenty-two miles from Lake Erie, and fourteen from Lake Ontario. A few miles above the Falls the current becomes narrow and begins to descend with increasing speed until in the last three-quarters of a mile the descent is fifty-five feet, and the waters rush along very rapidly. On the brink of the Falls where the river turns at right angles from west to north the channel is divided by Goat Island, which occupies about one-fourth of the entire width of the river. To the right are the American Falls and the left the Canadian,

TWO IMPORTANT CANADIAN UNIVERSITIES



McGill University in Montreal was founded in 1811, by James McGill, a wealthy resident of Montreal. Since that time it has received large gifts, and has added many new departments until now it is one of the best equipped institutions in America. Many of the professors have a world-wide reputation, and no university outside the British Islands takes rank above McGill. The picture represents the oldest of all the buildings, — the home of the Faculty of Arts, originally a small foundation, but now on a level with the world-famous Schools of Medicine and Engineering.



The University of Toronto was chartered in 1827 as King's College, but was not opened for students until 1843. It received its present name in 1849. It has grown wonderfully since that time, and several other schools and colleges have been made a part of the University which now has many departments. Its reputation has increased with its growth in numbers. The picture represents only one of many buildings. This building is much admired, and no one who visits the beautiful city of Toronto, "The Queen City of the Lakes," should fail to see it as well as the other colleges and halls.

or Horseshoe Falls. Below the Falls, the river narrows to twelve hundred and fifty feet and rushes down, foaming and boiling, between lofty walls of rock. Three miles distant are the famous Whirlpool Rapids which in their way are as wonderful as the cataract. The immense volume of water is here forced to flow through so narrow a channel (about three hundred feet) that it actually assumes a convex form, the centre being twenty feet higher than the edges. At Lewiston, the river once more becomes wider and smoother. The Niagara Gorge Railway affords an excellent opportunity for seeing the beautiful parks on each side of the river and also the chief points of interest. You can see pictures of the Falls on pages 680 and 681.

THE PLAYGROUNDS OF CANADA

Toronto is the entrance gate of all the summer resorts in the Highlands of Ontario called the "Playgrounds of Canada." This district with an area of many hundred square miles lies along the eastern shore of Georgian Bay between the counties of Simcoe, York and Victoria on the south and Parry Sound on the north. The country is thickly wooded with pine, hemlock, balsam and maple, and is dotted with hundreds of pretty lakes of every shape and size. The larger lakes have innumerable islands, varying in size from mere grass-grown crumbs of land to those containing many acres.

The Grand Trunk Railway connects Toronto with Gravenhurst, situated at the foot of Lake Muskoka, the southernmost of the three Muskoka Lakes. From here boats make daily trips to all parts of the lakes.

For the hunter and the angler the district is a paradise. Deer, bear, fox and small game abound, while trout, bass and maskinonge are found in great numbers. The numerous small lakes and streams fairly teem with fish. To those in search of scenic beauty there is scarcely a spot to rival it; while those in search of health will find the purity of air and the general surroundings most beautiful. During the summer season

more Americans than Canadians flock to the Muskoka region.

THE ALGONQUIN NATIONAL PARK

The park, the eastern section of the Highlands of Ontario, covers an area of two million acres of forests and water. A few years ago this vast tract was set aside by the Ontario government as a natural park. Twelve hundred lakes and streams are found within its boundaries. Unlike many of the other lake districts the waterways throughout the whole area of the park are continuous. Many of them are navigable for canoes from one to the other while others are connected by short and easy portages with trails blazed through the forest. The region has already won favour with a large number of travellers who are looking for new fields to explore, and for a place where civilisation has not yet encroached upon nature. Next to the scenic grandeur of the entire park, the main attraction is the fishing. The lakes, clean and deep, are filled with the black bass and salmon trout, while the streams are alive with speckled trout. There is no part of Ontario situated on as great an altitude as this territory. The atmosphere is pure and exhilarating. For a lover of nature there is no place better suited for a vacation. It is easily accessible by rail, and is also connected by stage coach with the Muskoka district.

TORONTO TO FORT WILLIAM

A favourite trip of tourists is that to the Pacific coast. The trip from Toronto to Owen Sound is by rail. There the tourist takes one of the Canadian Pacific's palatial steamers. The boat follows the west shore of Georgian Bay and enters Lake Huron through a channel opposite Cape Hurd. The crossing of the lake gives a delightful sail. Early the next morning the boat enters the beautiful St. Mary's River connecting Lake Huron with Lake Superior. The rapids by Sugar Island are passed and the boat turns to the left and enters the Sault Ste. Marie Canal to avoid the St. Mary's Rapids. It takes nearly an hour to pass the locks and

TWO IMPORTANT AND EFFECTIVE CANADIAN BUILDINGS



Photograph by Notman, Montreal.

From any elevated point in Montreal the frequency of church spires impresses every visitor. This is Christchurch Cathedral, the centre for the Anglican Church, in and around Montreal. It stands on St. Catherine Street, between University Street and Union Avenue. The cathedral was erected in 1859, and is an effective and pleasing example of Decorated Gothic architecture.



Photograph by Pringle and Booth, Toronto.

Few cities with twice the population of Toronto can boast a municipal building, so extensive and so imposing. The City Hall shown above was completed in 1899 at a cost of about \$5,000,000. The central tower is 300 feet high, and affords an excellent view of the city. The building stands on Queen Street, not far from Osgoode Hall, which has been shown on another page.

WHAT THE TOURIST MAY SEE IN CANADA



During the winter the drifting snow sometimes buries the railroad tracks, or when the road is on the side of a mountain the snow slides down from above. For this reason, snowsheds are constructed to protect the tracks and enable the trains to run. Great snowploughs are also necessary to bore through or push away the snow.

Photograph from Brown Bros.



Interior of snowshed.

This is the interior of a snowshed, built to protect the tracks from drifting snow through it the trains run safely, though it must be confessed the passage is somewhat gloomy. The important fact, however, is that trains can run through the shed when otherwise they might be blocked.

Photograph by Notman, Montreal.

THE GRANDEUR OF NATURE, EAST AND WEST



Photograph by Notman, Montreal.

The Saguenay River is a deep cleft between rocks rising high above the water, which is generally hundreds of feet deep. About thirty-three miles from Tadoussac, where it joins the St. Lawrence, Trinity Cape or Trinity Rock rises 1500 feet in three great steps. The picture does not show the top of the rock.



Photograph by courtesy of the Canadian Pacific Railway.

The Selkirk Range contains some of the most wonderful mountain scenery in the world, and no part of it is more fascinating than the Illecillewaet Valley, where the railroad follows the river valley, often crossing the stream, while the snow-covered mountains tower above.

just beyond is Whitefish Bay forming the southeast end of Lake Superior. The lake is the largest body of fresh water on the globe. It receives the water of over two hundred streams and contains numerous islands. The water is very clear and bitterly cold even at midsummer. The boat takes a northwest course and is soon out of sight of land. The following morning Isle Royale, a rugged rock-bound island, lying near the northwest shore of the lake, appears on the horizon. The boat passes between the island and the mainland, enters Thunder Bay and soon it has reached Fort William.

FORT WILLIAM TO WINNIPEG

The passengers continue their journey by rail. Passing the station the train leaves the lake and enters a desolate rock-strown region. Few settlements are seen. After many miles the country becomes wooded and many lumber camps are passed. A few miles beyond Ingolf on the boundary between Ontario and Manitoba the country gradually becomes more and more level. Soon the train leaves the forest region of the east and is speeding over the great prairies of the west. A few miles further the road turns to the south following the Red River and in a short time the train stops at Winnipeg, the great Western metropolis, which has already been described on page 5366.

WINNIPEG TO BANFF

From Winnipeg the road runs over flat and limitless prairies. Many towns are passed as the train speeds in through Manitoba, Saskatchewan and Alberta (see pages 4104, 4105). At Calgary, the tops of the Rockies are seen rising above the surrounding hills. Beyond the city the train ascends rapidly, twisting among the foothills, and following the course of the Bow River. The Rockies are entered through the Bow River Gap, where there is barely room for river and railway to pass side by side. A few miles more and Banff is reached.

BANFF TO VANCOUVER

Leaving Banff the train passes through one of the grandest mountain ranges in the world, one filled with the most varied and attractive bits of Alpine scenery. Here and there ribs of rock stand out like the frame of a mighty skeleton. Ice rivers drain lakes of snow nestling apparently in the clouds, and tumble in a wild confusion over rocky beds walled in by mountain sides. It seems all a dream and the passengers are not awakened until the train rumbles into Vancouver, described on page 5611.

Canada is going through much the same development as occurred in the United States thirty to sixty years ago or even less. In many respects the growth of Vancouver and Winnipeg reminds us of the wonderful development of San Francisco, Seattle and Chicago. The inrush of population into the great western prairies is like that which has taken place in the great states beyond the Mississippi since the Civil War.

Therefore, as one goes to and fro in Canada, he can see much of the history of the United States as his father saw it. Conditions in the United States have changed a great deal in a short period of time. Where a few years ago was unbroken prairie are now prosperous towns, thriving villages and even great cities. The same thing is taking place in Canada. The history of Canada will to a large extent repeat that of the United States, except that the Canadians have been wiser and are not squandering their resources so recklessly.

It is hard to find a country more attractive to the summer tourist. Those fond of social life can find it at the Thousand Islands. Those desiring fishing, canoeing and rambling through forests primeval will go to the "Playgrounds" or Algonquin Park, while those wishing wild mountain scenery and Alpine climbing will find their heart's desire in the Rockies. No wonder Canada is fast becoming the favourite resort for tourists from all parts of the world.



CONTINUED FROM PAGE 6080.

THE STONE IN THE ROAD

THERE once lived a king who ruled his subjects so wisely and so well that his fame spread near and far.

But everything was left by the people for someone else to do, and the king decided to teach them a lesson.

Now, it happened that one of the roads that led to the town passed through a hill. To this spot the king went late one night, and scooped a hollow right in the middle of the cart-tracks. Then from the folds of his cloak he took a small bundle, and placed it in the hole. Going to the side of the road, he loosened a large stone, which he carried to the hole he had made in the road. There he dropped it, so that it completely covered the opening.

Next morning a farmer driving his cart came that way.

"Ah," he cried, "the laziness of those people is terrible! Here is this big stone right in the middle of the road. I dare say it has lain there long enough for someone to have moved it. But no! everyone is too lazy to attend to such a simple matter." So saying, he pulled his horses to one side and passed on.

Presently down the road came a soldier. He sang gaily as he marched along; but his head was too far back for him to notice the stone, and in a moment he was sprawling in the

roadway. He picked himself up, grumbling at people's carelessness, and walked on. But he left the stone where he found it.

By and by a company of merchants, with mules and pack-horses heavily laden, passed that way.

"This is a fine country!" said one. "I wonder how long that big stone has been lying there." But not one of them thought it worth while to move it out of the way.

Thus it went on day after day, week after week, and no one even attempted to move the stone. When three weeks had passed, and it still lay in the road, the king sent word to his people to meet him at this very spot.

"My good people and faithful subjects," he said, "it was I who put this stone here; and for three weeks everyone who has passed has blamed his neighbour for not taking it out of the road."

Then, stooping down, he lifted the stone, and showed them the hollow place beneath, in which lay a small leather bag. Attached to the bag was a label with the words: "For him who lifts the stone."

He undid the string which fastened the mouth of the bag, and a stream of bright golden coins fell to the ground.

THE WONDERFUL FRIENDS

A SHEPHERD lad was once sent by his father to carry food to his elder brothers, who were in the army of the king, encamped before a powerful enemy. When the young boy arrived, he found everywhere dismay and anxiety. For the champion of the other side had challenged any of their host to combat, and so mighty was he that none had dared to answer.

"Who is this man," inquired the shepherd lad, "that he should defy the armies of the living God?" He offered to go himself, and was brought before the king, and the king, after speaking to him, had him dressed in his own armour. But the lad said, "I cannot go with these, for I have not proved them." And he put them by. Then he took his shepherd's staff and his sling, gathered some smooth stones from the brook, and went out to meet the champion.

When the mighty warrior saw him, he was enraged, and cursed him in contempt. But the young patriot replied, "You come to me with a sword and a spear and a shield; but I come to you in the name of the Lord of hosts, the God of the armies of Israel, whom you have defied." And as the warrior bore down upon him he fitted a stone to his sling, and, whirling it about his head, let fly; and the stone struck full in the giant's forehead, and he stumbled and fell. Then the lad snatched the fallen hero's sword, and smote off his head. In an instant despair had changed to confidence and enthusiasm.

With a shout of joy, the army of Israel arose, and, flinging itself upon the enemy, drove them away in utter confusion.

Then the King of Israel inquired about the shepherd boy, but none could tell his name. "Inquire whose son the stripling is," he said; and presently the boy was brought before him, to answer for himself. "I am the son of thy servant Jesse the Bethlehemite."

Beside the king was his son, and this gracious young man, regarding the shepherd boy as he spoke to his royal father, felt his soul suddenly knit with the handsome lad's, and there and then

loved him as his own heart. So he spoke to the king, and the king said that the lad David should no more return to his father's home, but should live with him in his palace, and be a soldier instead of a shepherd. And the king's son, Jonathan, took off his royal robe, and put it upon David, and gave him his sword, his bow, and his girdle. And he held David's hand, and looked in his eyes, and they made a vow together of a friendship which should last till death.

Life had changed utterly and completely for David in an instant. From living in a humble cot, he went to live in a king's palace. From being a shepherd of the hills, he was a captain of soldiers.

What dreams of glory must have crowded his brain! It seemed as if there was no height to which he might not soar, no fame he might not earn, no happiness he might not now enjoy.

In all the glory and honour which now invested him, there was one thing more gracious and more glorious than all the rest, and this was the deep love of the king's son. Clothed in such a love, as with a kingly robe, the young David was something more than warrior and hero.

What Julius Caesar was to the Romans, what Napoleon was to the French army, this and more was David to the hosts of Israel. The spell of the man's *soul* was over the people, and in him they beheld a captain from heaven, whose right hand was terrible with victory. So, wherever David went with the army, triumph followed, and, on the return of the soldiers, the streets were loud with his name and with music to his honour.

In this glory of young David, Jonathan rejoiced with all his noble nature.

But the people shouted, "Saul has slain his thousands, and David his ten thousands!" And this cry pierced the king's chamber, and struck on his soul like the voice of Destiny. From that day Saul regarded David with other eyes.

Slowly it came to the mind of the king that David was his enemy. At first he had been envious of the praise showered upon his favourite; now he was suspicious. He regarded him as plotting for the throne of Israel.

to the nation that the king put away his suspicion, and said, "As the Lord liveth, he shall not be slain."

But, in a war that soon followed, David was again so successful that the king's suspicions returned, and, with his



Courtesy Fissot Picture Soc., N. Y. Copyright by de Brunoff, 1904

THE STONE FROM DAVID'S SLING STRUCK FULL IN THE GIANT'S FOREHEAD

He spoke about this idea to Jonathan and his courtiers, saying that David was dangerous to the royal house. But Jonathan, after he had warned David to lie in secret for a little space, went to the king and spoke so convincingly of David's honour and of his service

own hand, on a sudden impulse of hatred, as he sat with his successful captain, most basely the king sought to kill him with a javelin. Then David fled from the court.

Jonathan came to him in secret, and the two friends comforted each other.

Then Jonathan returned to soften the king's wrath against David. But when he spoke to Saul, the king this time burst out upon him with violent rage, bidding him see that he would never succeed to the throne while David lived; and admonishing him to throw aside a treacherous friend, and to protect his own interests while there was time.

To all this Jonathan replied, "Why should he be killed? What has he done?" And this gentle answer so en-

and wept together, till David was unmanned, and broke into tears.

Then Jonathan comforted the mighty conqueror, valuing his friendship more than life. "Go in peace," said he; "go in peace, because we have vowed, both of us."

Many years afterwards, when David, having gone through a multitude of adventures, was become a king himself, he heard how Saul and Jonathan had died together in battle. The news broke



The king's son felt his soul suddenly knit with the soul of the handsome lad

raged the king that he hurled his javelin even at Jonathan.

Then Jonathan saw that it was in vain to plead, and unsafe for David to be within reach of his father's arm. So he approached David in secret, by a signal agreed upon by them beforehand, and David fell upon his knees, bowed his head to the ground, and waited for Jonathan.

Jonathan came near, took David into his arms, and they kissed one another,

him down, and he cried out, "The beauty of Israel is slain!" Then the old friendship, with all its fragrance of innocence and youth, returned to him, and he said, "I am distressed for thee, my brother Jonathan. Very pleasant hast thou been unto me. Thy love to me was wonderful!"

One is quite sure that the last word uttered by the dying lips of Jonathan was the name of his friend, and that it went to heaven winged with blessing.

THE GREY TERROR

THE FIRST BOY WHO PLAYED WITH A DOG

AFTER Swar's adventure with the lioness, the men and women in the camp were very watchful over the son of their chieftain. He was never allowed to go out alone beyond the camp on Cornhill. It was not till the Grey Terror arrived that he had any more exciting adventures.

"Game is getting wonderfully abundant," said Wawa, one morning, late in autumn, to his wife Bina.

Only a few minutes before he had gone out hunting, and he had returned loaded with spoil. The river swamp was crowded with wild sheep and elk and horses and oxen and deer. That day the tribe got enough meat to last them till the winter months. Everybody was wild with joy, except Wawa.

"Something terrible must be happening on the south side of the Thames," he said that evening, as the tribe was eating round the great fire on the top of the hill. "I went down to the ford at Westminster. For a quarter of a mile the river is black with animals swimming madly across to the northern wilderness. They are all going north, and the tribe will have to go with them."

"Why?" cried all the men.

"I do not know why," said Wawa; "but I will soon find out."

He took his heaviest stone axe and his best stone dagger, and tied them round his waist. He then stripped himself of all his skins, and dived into the river, and struck out for the southern shore. None of the men and women of the tribe slept that night.

When morning came, there was no need for them to go out hunting. Herds of terror-stricken beasts came charging up the hill and sweeping through the camp, overturning the skin tents and scattering the tribe. Everything was in confusion when Wawa came limping up from the river. His stone axe and dagger were gone, and he was wounded in the leg.

"Don't trouble about the tents!" he shouted madly. "The Grey Terror is

coming, and there is no time to escape! Out in the jungle for your lives, and get wood to make a great fire round the camp! Out, I say! Out, all of you — men, women and children — and collect brushwood!"

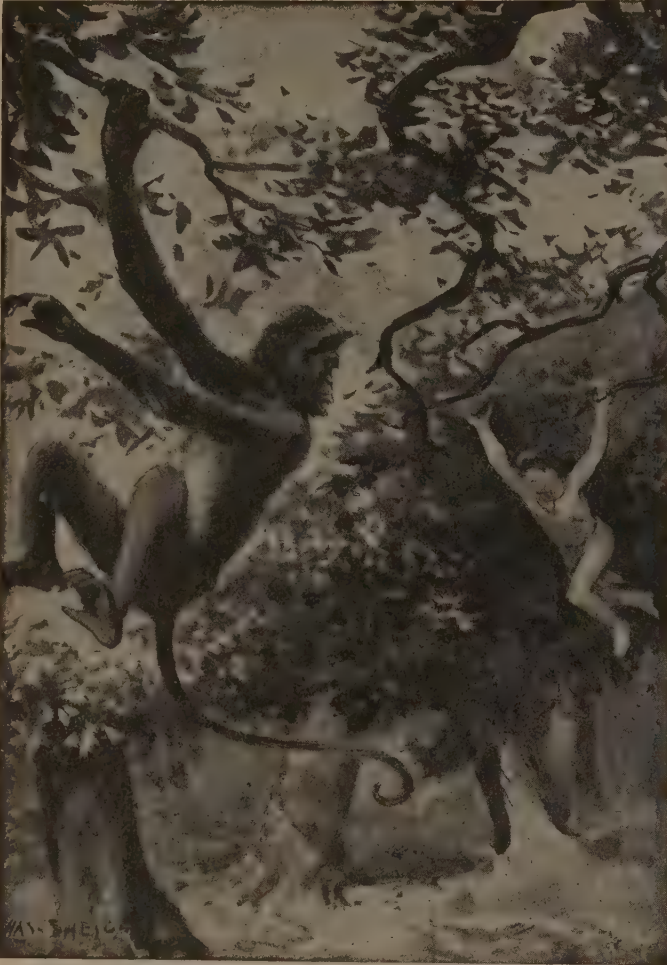
No one had ever seen Wawa look so terrible as he did then. No one dared to wait and question him. All the tribe rushed into the jungle, the children following their mothers, as Swar followed Bina. They helped to tear down the brushwood, while the men hammered with their stone axes at the smaller trees, or lighted fires at the roots in order to burn through the trunks.

At this awful moment Swar took it into his funny little red mop of a head to trot away into the swamp and see what was the matter with everything. Bina, of course, missed him, but thought he was with his father; while Wawa, who was limping round the camping-place and studying where to make the circle of fires, naturally fancied that his son was busy with his wife collecting wood.

All the jungle swamp was now empty of large animals. They had fled into the northern wilderness. Swar took the track towards Hampstead, which he had followed on his first voyage of exploration. The grey monkeys chattered in the tall forest trees as he passed by, and great long-legged storks, searching for frogs in the pond, slowly flew away at his approach.

"I don't know what I shall hunt to-day," said Swar to a monkey that was peering curiously at him from the lowest branch of a fig-tree. "Could you tell me where I could find the Grey Terror that daddy spoke of? I must kill it, because it is frightening mummy."

Swar thought that the monkey would understand him. It looked such a quaint human creature, as it peeped down at him, that he was sure it was some strange sort of child. By a stroke of wonderful luck, the monkey that morning happened to be in a mischievous mood. Plucking a large juicy fig, it threw the fruit at Swar, and struck



SWAR FOLLOWED THE MONKEY FROM TREE TO TREE

him plop! on the face. In the twinkling of an eye Swar had made up his mind. This grey, ugly thing which threw figs at you when you asked it a question was surely the Grey Terror, he thought.

He was up the tree in a minute. No man or boy of modern times could climb with the agility that this primitive little savage displayed. He was almost equal to the monkey at its own game. He followed it from tree to tree, never touching the ground once, but swinging from branch to branch, like a little human ape. Sometimes he stopped and nestled in the forking branches of a tree, and made a meal on nuts and figs. And there, in the tree beyond him, squatted the monkey, imitating his movements, and feeding on what he fed

on. Swar kept chasing the animal till night-fall. By that time he was so tired out that he fell asleep over his last meal, and the monkey came and squatted beside him, high in a branching oak-tree, and put its hairy arms gently round the sleeping boy.

All that night there was a strange noise in the forest. Pitter-patter, pitter-patter it went on the leaf-strewn ground. Now and then the shriek of a rabbit was heard. And once, as the autumn moon shone for a moment the light from it fell on a vast, grey, moving mass, which was silently sweeping through the forest. A thousand glittering eyes instantly looked up, and the strange stillness of the jungle was suddenly broken by a loud, wailing cry from a thousand red throats. Then the clouds came together,

and silence and darkness again fell on the forest, and the pitter-patter, pitter-patter noise gradually died away.

Swar was very angry when he awoke at daybreak, and found the monkey's arm around him. He had forgotten all about the Grey Terror, and he felt hungry and lonely, and he wanted to get back to his father and mother.

"I don't want to play with you," he said, as his strange bed-fellow began to gambol about the tree and chatter to him. "I'm going back to the camp."

He climbed down from the oak-tree, and set out to find the River Thames. As you can guess, he was a good distance away from Cornhill. Happily, his father had taught him how to guide himself by the position of the sun, and after a tramp of four miles he came to

the shore of the Thames at the place where Chiswick now is.

"Now I know my way home!" he said joyfully.

And, turning right to the east, he trotted along the river-bank towards Westminster. Of course, there was no path along the river in those distant days. The land was covered with a dead undergrowth, broken here and there by irregular tracks made by the woolly elephants and the huge buffaloes as they went down in herds to water to drink. At Westminster, where the Thames shallowed, all the jungle for about half a mile had been trampled down flat by the huge droves of terror-stricken beasts that had fled before the Grey Terror into the northern wilderness.

As Swar was passing over this strange place, a little animal came out of a muddy tuft of reeds, and began to follow him. Swar did not notice it until it licked his bare legs, and made him turn round with a start. He had no weapon, and he gave a cry of fear, and ran away as fast as he could. The little animal easily overtook him. Instead, however, of trying to hurt him in any way, it ran by his side, and attempted to play with him. Swar at last stopped, and looked at him in a friendly way.

"You're a funny little thing," he said. "You're like a young wolf-cub, but your grey fur is finer and softer, and you're not a bit fierce."

It was, indeed, only a frolicsome little puppy-dog. Swar found it a delightful playmate. They chased one another in turn from Westminster to Cornhill. Panting from the exercise, and wild with delight over his new pet,

Swar rushed up to the camping-place of the tribe, and shouted and capered outside the circle of burning wood.

"Joy, joy, joy!" cried Wawa. "Swar is safe! Beat down the fire, men, and let him in!"

Men, women, and children hastily caught up whatever was handy — skins, sticks, and stone spears — and raked some of the burning wood away to make an entrance for the little boy. Bina and Wawa rushed forward to embrace him, but the little puppy-dog got through first, and rushed towards them, barking loudly out of sheer excitement.

"The Grey Terror — the Grey Terror! It is upon us! The river! Jump into the river! It is our only chance! Oh — oh — oh!" shouted all the tribe, in a madness of fear.



THE LITTLE ANIMAL TRIED TO PLAY WITH SWAR

They leaped through the line of fire at the water-edge, in a wild, confused, and swift movement. Only Wawa remained behind. Lifting up his great stone axe, he sprang to the opening made in the fire circle, shouting:

"Run with your mother, Swar! There is still time. I will keep the Grey Terror back while my life lasts!"

Swar took his little puppy up in both arms, and began to run to the water as fast as his little legs would carry him.

"Kill it, boy! Kill it!" Wawa shouted to his son. "That is one of the Grey Terrors you are carrying!"

Swar stopped running in blank surprise, and looked first at his father, and then at the puppy. The little dog began to lick his face. In the meantime, Wawa had turned, and he was now gazing, open-mouthed with astonishment, at the empty jungle stretching from Cornhill to Walbrook. He had expected to see a vast, grey, surging mass of fierce beasts charging up the hill.

"This is one of them—a very little one," he said at last, going up to Swar, who was sitting on the ground, clutch-

ing the puppy as tightly as he could. "But the great herd of the Grey Terror seems to have swept northward on the trail of the forest cattle. Where did you find this little beast, my son? Wow-wow-wow! How playful and friendly the little Terror is!"

Wawa patted the puppy, and it licked his hand, while Swar was telling his father his adventures with the monkey, and his finding the dog.

"It was well for you, my son," said Wawa gravely, "that you slept last night high in an oak-tree. The Grey Terror came sweeping up to our camp early in the evening, and even with a double line of fires we had trouble in beating them off.

"They must have passed you in the darkness when they turned north. Yes," he added, as Swar looked up to him with imploring eyes, "you can keep your little grey beast as a playmate if you like. At least, unless he grows fierce and dangerous."

And that was how Swar came to be the first human being who had a faithful dog to help him when he went out hunting.

WHY THE SWALLOW BUILDS ON THE WALL

IN the days of long ago, when the first swallow skimmed lightly over moor and meadow, she was very proud of her pretty plumage and her long, forked tail. Indeed, she became so vain that she could think of nothing but how best to show herself off before all her feathered friends. So it came about that she quite forgot how to build a nest.

After trying in vain for a time, she decided to ask help from some of the other birds. She went to the thrush, for she thought she looked the most good-natured, and asked her help.

"I will show you gladly," said the thrush. "First, you take some of these old grass stalks."

"Yes," said the swallow.

"Then take a lump of clay," went on the thrush, "to plaster them."

"Oh, yes, I know!" broke in the swallow.

"Plaster them exactly like this."

"Yes, I can do that all right."

"Then you turn it up like this."

"Oh, yes, I know!" again said the swallow.

"And then you——"

But before the thrush could add another word the swallow interrupted again.

"I know," she said; "of course."

This made the thrush angry.

"Well," she said, "if you know so much, why do you come bothering me with your questions?"

So saying, she flew away to look after her eggs.

Only half round the nest had been built, and the swallow, thus left to herself, could not make out how to finish it. She tried again and again, but all in vain. So she stuck the side she knew how to build on a wall, and made it do.

And thus it is that the swallow, through thinking she knew more than she did, has only half a nest to this day.

THE PALACE OF PEACE AT THE HAGUE



Soon after the first conference to discuss the possibility of putting an end to war, which met at The Hague, the capital of the Netherlands, in 1899, Andrew Carnegie announced that he would build a permanent home for the conference and the Court of Arbitration appointed to sit there. The building has just been completed at the cost of more than \$1,500,000.

STORIES TOLD IN INDIA 3,000 YEARS AGO

THE BLUE JACKAL

A JACKAL, prowling round a town one night, fell into an indigo-tank, and came out dyed blue.

"No one will know me now that I am this splendid colour," said he, "so I will pretend that I am king of all the beasts."

He began by ruling over the jackals, and then the lions and the tigers submitted to him. This made him proud and insolent, and he no longer took any notice of his old jackal friends.

One night they gathered round the self-made king and began to howl, and so soon as the blue jackal heard the others yelling, his natural instinct led him to do the same, and at once all the other creatures in the jungle knew him to be nothing better than a jackal, and he lost for ever his crown.

Silence is sometimes golden.

THE TRAVELLER AND THE HERON

A WEARY traveller lay down to rest under the shadow of a fig-tree and went to sleep. In the tree lived a crow and a heron, and the heron had often been warned he would come to a bad end if he kept company with an evil crow.

As the sun shifted, so the shadow of the tree moved away from the traveller, and he was left exposed to the sun. But the heron, seeing this, felt sorry for him, and spread out his wings and shaded the weary traveller. The evil crow, however, laughed at the heron, and then, to annoy the traveller, dropped a stone upon his face and flew away.

When the traveller, smarting from the sting of the stone, jumped up and seized his bow and arrow, he saw only the heron in the tree above, and, thinking that this was the culprit who had thrown the stone, he fitted an arrow to the string, and fired and killed the heron.

Avoid evil companions or they may lead you into serious trouble.

THE CROWS AND THE ANKLET

A PAIR of crows lived in a hollow tree, and there also lived in the bottom of this tree a fierce snake that

used to eat the young of the crows as soon as they were hatched.

The next day when the son of the king came down to the river close by to bathe, the male crow flew down, and, seizing a golden anklet that the prince had removed and laid on the bank, he flew away with it and dropped it inside the hollow tree.

Of course, as soon as the king's son came to the bank again after bathing and put on his clothes, the anklet was missed. There was a great hue and cry, and every place was searched for the missing jewelry. At last the anklet was found in the hollow tree, and the serpent was also found by the prince's attendants, who instantly killed it.

Skill will make up for lack of strength.

THE ELEPHANTS AND THE MOON

IN a time of drought a number of elephants were hard pressed to find water for themselves. But at last they discovered a pool, near which lived a colony of hares, and in going to and fro the elephants used to trample upon several hares every day. At last the matter became so serious that a meeting of the hares was held, and, after a good deal of discussion, an old hare undertook to make the elephants cease using the pool.

Standing upon a hillock, as the elephants approached, he said to their leader:

"Sir, I am an ambassador from the moon, who wishes you to know that this is his pool, and that the hares whom you are driving away are its guardians."

"We know nothing of this," said the elephant.

"Well, if you come here to-night, you will see the moon in the pool, shaking with rage."

The elephant went. He saw the reflection of the moon, which quaked as the water rippled, and in great fear he promised that the elephants should trespass on the pool no more.

Superstition often causes those who are mighty to tremble.

CONTINUED ON PAGE 6305

THE ROBBER AND THE MONK

A MONK who belonged to one of the monasteries near Paris used to travel from village to village in the neighbourhood collecting money for the support of the monastery. One day, when he was returning home through a wood, a robber suddenly stepped in his path, and, presenting a pistol, demanded that the bag of money should be handed over.

The monk saw that he would lose his life if he resisted, so he gave the robber the bag, asking only one favour in return.

"What is that?" said the man.

"Well," replied the monk, "when I get back to the monastery, I don't want my brethren to think I tamely gave up

the bag of money without making a fight, so I am going to hold out my cloak, and I want you to fire a bullet through it. Then it will be clear to my brethren that my life was really in peril."

The robber fired, but the monk could see no hole made by the bullet, and expressed astonishment.

"Ah!" laughed the robber. "That is not surprising, for I will tell you in confidence that I never load my pistols with bullets; I simply fire off gunpowder, and that is sufficient to make any traveller give up his money."

"Really!" answered the monk; and with that he sprang suddenly upon the robber, and recovered his money.

THE MAN WHO BROKE THE NEWS

THE son of a country landowner went to Paris to study at the University, and, after he had been there some time, he was astonished one morning to see an old manservant from his father's house.

"Why, what is the matter?" said the young man.

"The cat is dead," was the reply.

"The cat dead! Why, what did the poor animal die of?"

"Of indigestion, through having eaten too much meat."

"Too much meat! Where did the meat come from?"

"From your poor horses."

"The horses! Are they also dead, then?"

"Yes, the poor animals died from exhaustion, through having to carry so much water."

"What was the water for?"

"To put out the fire at the house."

"The fire at our house?"

"Yes, it caught light through the maidservant forgetting to put out the candles."

"What candles do you mean?"

"Why, the candles used at your father's funeral."

"My father's funeral! Do you mean to say my father is dead? Why did you not tell me at once?"

"Well, I was told to be sure to break the news to you as gently as possible."

THE PAIR OF NEW BOOTS

A FRENCH soldier who was serving with his regiment in Algeria wrote home to his old father asking that a new pair of boots might be sent to him.

The father went to the village shoemaker's and bought a pair of strong boots, and then asked one of his acquaintances how to send them.

"Oh," said he, "you had better telegraph them."

"But that will cost a great deal of money," replied the old man.

"Oh, no," said the other, "it will cost you nothing. All you have to do is to take them out into the open coun-

try and hang them on the telegraph wire."

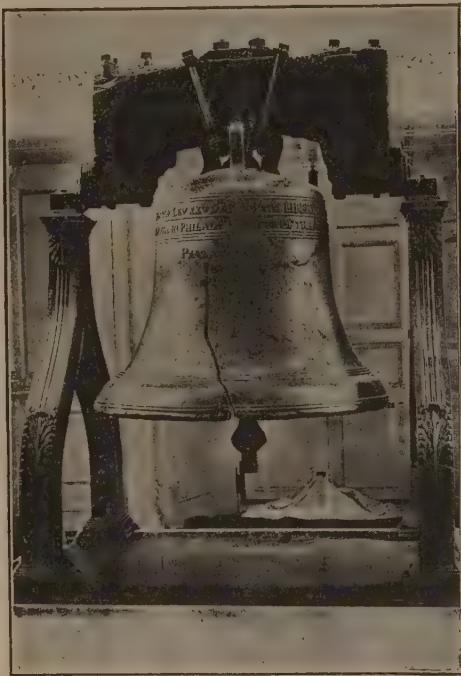
The old man decided to follow the advice, but hardly had he departed when a beggar, who had noticed the performance, went quietly, and, taking down the new boots, hung up his old and ragged ones in their place.

The father, feeling curious as to whether the boots had gone, went out of the village to see.

"Bless my soul," said he, "this telegraph is a wonderful thing. Here, for nothing, I have been able to send a pair of boots all the way to Algeria."

LIBERTY BELL

IT is said that the Liberty Bell was brought over to Philadelphia in 1752 and was rung to celebrate the adoption of the Declaration of Independence on July 4, 1776. After that it was rung on important occasions until it became so badly cracked that it could never be used again. It now hangs in the hall of the old State House in Philadelphia, where visitors come to see it from all over the United States. On its side are inscribed the words, "Proclaim Liberty Throughout the Land to all the Inhabitants thereof."



INDEPENDENCE BELL

THERE was tumult in the city,
In the quaint old Quaker town,
And the streets were rife with people
Pacing restless up and down, —
People gathering at corners,
Where they whispered each to each
And the sweat stood on their temples
With the earnestness of speech.

As the bleak Atlantic currents
Lash the wild Newfoundland shore,
So they beat against the State House,
So they surged against the door;

And the mingling of their voices
Made a harmony profound,
Till the quiet street of Chestnut
Was turbulent with sound.

"Will they do it?" "Dare they do it?"
"Who is speaking?" "What's the news?"
"What of Adams?" "What of Sherman?"
"Oh, God grant they won't refuse!"
"Make some way, there!" "Let me nearer!"
"I am stifling!" "Stifle, then!"
When a nation's life's at hazard,
We've no time to think of men."

So they beat against the portal,
Man and woman, maid and child,
And the July sun in heaven
On the scene looked down and smiled;
The same sun that saw the Spartan
Shed his patriot blood in vain,
Now beheld the soul of freedom,
All unconquered, rise again.

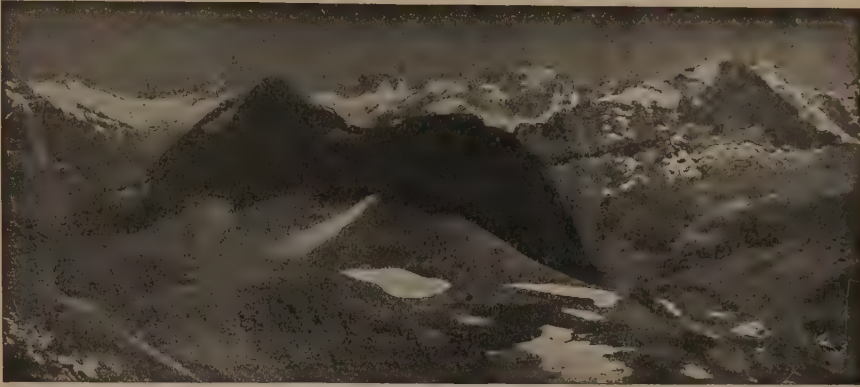
See! See! The dense cloud quivers
Through all its lengthy line,
As the boy beside the portal,
Looks forth to give the sign;
With his little hands uplifted
Breezes dallying with his hair,
Hark! with deep clear intonation,
Breaks his young voice on the air.

Hushed the people's swelling murmur,
List the boy's exultant cry!
"Ring!" he shouts, "Ring, Grandpa!
Ring! Oh! ring for Liberty!"
Quickly at the given signal
The bell-man lifts his hand,
Forth he sends the good news, making
Iron music through the land.

How they shouted! What rejoicing!
How the old bell shook the air,
Till the clang of freedom ruffled
The calmly gliding Delaware!
How the bonfires and the torches
Lighted up the night's repose,
And from the flames, like fabled Phoenix,
Our glorious Liberty arose!

That old State House bell is silent,
Hushed is now its clamorous tongue
But the spirit it awakened
Still is living, — ever young,
And when we greet the smiling sunlight
On the Fourth of each July,
We will ne'er forget the bell-man
Who, betwixt the earth and sky,
Rang out, loudly, "Independence,"
Which, please God, shall never die!

— ANONYMOUS.



The greatest mass of mountains in Europe, through parts of which the Simplon Tunnel was made

CONTINUED FROM PAGE 6177.

BORING THROUGH THE ALPS

THE MOST WONDERFUL WAY EVER MADE

THE story of the boring of the famous tunnels through the Alps is like a fairy tale. There are three of these tunnels—the St. Gothard, the Mont Cenis, and the Simplon—and through them, every day, hundreds of travellers pass out of Switzerland into Italy, beneath the Alps, in the very heart of the greatest mountains in Europe, with millions of tons of earth stretching for more than a mile between them and the sky.

Let us take one of these tunnels only—the Simplon. The work occupied 10,000 men nearly eight years, and cost over fifteen million dollars. When Hannibal crossed the Alps with his army, it took him fifteen days, and cost an enormous number of lives. Napoleon took five days to cross when he set out to conquer Italy. He did not forget the difficulties of the crossing, and when he became emperor he built the Simplon Road running along the Simplon Pass, over a shoulder of the mountain, and rising to a height of 6,600 feet. It is 41 miles long; it is carried over 600 bridges, through many galleries and short tunnels cut in the rock, or built of solid masonry to protect the traveller from the swift

rush of avalanches in winter. Until the opening of the Simplon Tunnel, that was the only way over the Alps at this point. The Alps are pierced by two other famous tunnels—the Mont Cenis and the St. Gothard—but they are far away from the Simplon.

There are two features in which the Simplon Tunnel differs from all others. Being $12\frac{1}{4}$ miles in length, it is longer than any other tunnel in the world. A more remarkable point is the immense distance beneath the surface at which it runs. When we reach the highest point to which the tunnel climbs in the heart of the mountain, we have still more than a mile of solid rock above us. It could have been made much nearer the top of the mountain, but that would have meant a very high climb for the trains before reaching the tunnel. On the north, or Swiss, side the entrance is 2,249 feet above sea-level, while on the Italian side it is 2,079 feet. The tunnel slowly rises till it reaches a height of 2,310 feet. Above that lies a mass of mountain more than a mile high. The tunnel slopes slightly towards each end, so that any water which enters may run down the slopes and escape.

The engineers expected to find great heat—for the deeper we go in the earth the higher the temperature rises. They expected to find a heat of about 100 degrees, but when they came to the worst part they met a heat of 132 degrees, while hot water flowed in. There were rivers and lakes hidden in the mountains of which they had previously known nothing. There were soft parts, too, in the mountains, which they had not expected to find.

The two ends of the tunnel—Brigue on the Italian side, and Iselle on the Swiss—became cities of industry. At each end a river was harnessed and made to supply power for driving the many kinds of machinery which were used. A new colony sprang into existence at each end of the tunnel, in which were comfortable homes for the workmen and their families, cafés, hospitals, places of amusement.

Every place these little towns were lighted by electricity, made by the running of the harnessed rivers. The comfort of the workmen was looked after. They had special clothes to work in, warm and cold shower-baths, and cooling chambers were furnished, to prevent their feeling the cold on coming out from the hot depths of the mountain into the chill atmosphere of the Alps. Machinery forced in enormous quantities of cold, pure air, and drew out the foul air. Few horses were allowed in the tunnel, because they made the air impure; and special watering machinery instantly converted the dust into mud, so that the men should not breathe it. The conditions were excellent, and the men worked with extraordinary goodwill.

Work was begun at both ends of the tunnel at once—with 6,000 men on the Italian side, where the harder work was expected, and 4,000 men on the Swiss side. Drills driven by hydraulic power were used to bore holes in the rock, and in the holes thus made charges of dynamite were placed and fired. Water under heavy pressure smashed up the rock which the dynamite dislodged, and long trains carried away the rubbish and brought in building material, so that solid masonry

could be built to form walls, and give extra support. Day and night men were at work, working in shifts of eight hours each. All the machinery for the work had to be specially made, and with this the men bored away 18 feet a day. The men on the Italian side worked toward the Swiss side, and those on the Swiss side toward the Italian.

For a time all went well. Soon, however, those on the Italian side met with unlooked-for difficulties. They broke into soft and treacherous ground, where they had expected to meet solid rock. To make this secure, they erected enormous timbers, but these were crushed. Next, heavy steel girders were tried, but so great was the pressure above and all round that these became twisted like wires. Not until quick-drying concrete was built round them could the girders be made to hold up.

Then the workmen came upon an underground river of intensely cold water. It rushed into the galleries at the rate of about 15,000 gallons a minute. That gives over 100,000 tons of water in the course of the day and night, enough to supply all the wants of a large city.

The men worked in mackintoshes and waterproof boots and leggings, but they were in a shower-bath the whole time, and up to their knees in water, and often in danger of drowning. Next, drainage systems had to be constructed to carry away this river, and, after a delay of six months, the danger-spot was safely passed.

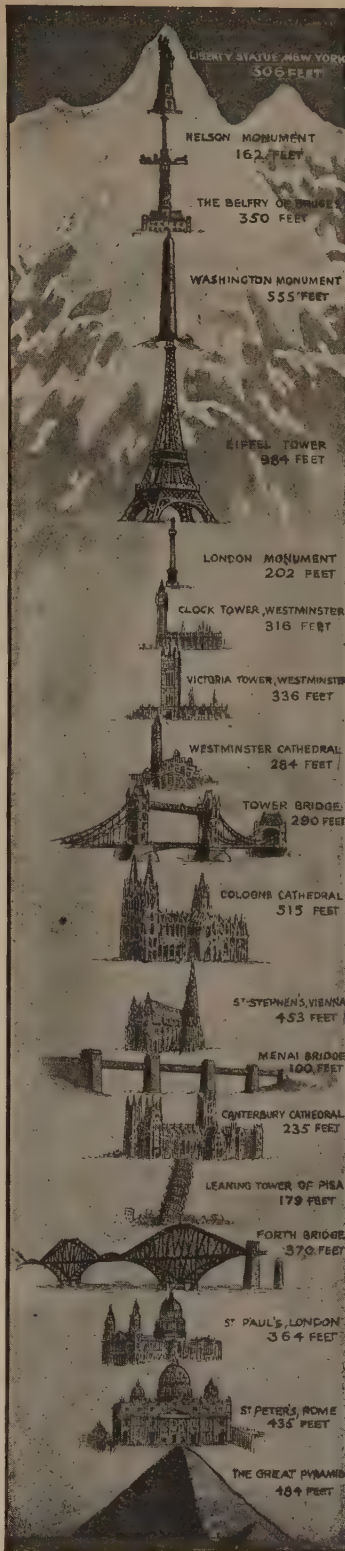
Very soon afterwards, however, the rocks into which they were boring began to get hotter, and streams of hot water gushed out. Having passed a river of cold water, they had now come upon another, which filtered down through the scorching rocks. It flowed into the galleries at the rate of nearly 300,000 gallons an hour—a river of scalding water. Nobody on the spot dreamed of giving up the work, though everybody outside thought that the task must be abandoned. The men on the Swiss side also had come upon baking rocks and hot water. The same idea

was adopted for both sides of the tunnel. On the Swiss side powerful machinery pumped in cold water from beyond the end of the tunnel upon the burning rocks and upon the cracks from which the scalding water issued, and so cooled both rock and water. Cold water was also sprayed in the air.

The plan on the Swiss side worked well, until a great storm at that end of the tunnel caused a landslide, which cut off the water supply. The hot water was still pouring in, so the engineers had to put up enormously strong iron doors, right across the tunnel. This, to a great extent, shut out the flow of hot water, and enabled the men to go on building up the walls in the rest of the tunnel. And there they had to leave their boring, and wait for the men on the Italian side to work their way through.

The brave fellows on the Italian side worked doggedly on. They now turned one river against another. The cold river through which they had fought their way was made to serve the pumps, and to help to cool the scorching rocks and water where their present work lay.

Little by little they worked their way onwards to the spot where they expected to break through. They knew exactly the spot at which they *should* break through and make the tunnel complete. They



had been for years working in what they hoped was a straight line. Had they gone straight, or had they gone astray, and might they have to go on boring, and find that they had missed the line that they should have followed?

At last the men on the Swiss side heard the sound of the drills, and knew that the others were approaching them. Twenty feet, nineteen feet, then only sixteen feet remained, and so the last barrier was gradually bitten away by the drills. Then came the last charge of dynamite which was to open the way. It was put in and fired, and a hole in the rock eight feet wide opened. To the joy of everybody, they saw that the tunnel was complete. After twelve miles of boring, starting from different countries, the workmen met in the heart of the Alps.

In May, 1906, the King of Italy and the President of Switzerland met in the tunnel, and a month later, nearly eight years from the beginning of the work, trains were running through the Simplon, the longest and deepest of all the tunnels in the world.

This work stands as one of the most marvelous exhibitions of the power of man, who seems so helpless, but is really strong because he knows how to use his brain in accomplishing his purposes.

These 19 high buildings could stand like this between the mountain-top and the trains

WHERE THE UNSEEN TRAINS RUSH PAST



For thousands of years the famous Simplon Pass, shown in this picture, was the principal route across the Alps, but since 1906, when the Simplon Tunnel that had been bored through the solid mass of the mountains was opened, the pass has been very little used. The splendid road was built by Napoleon. Now, instead of slowly plodding or driving across this road, travellers dash through the mountains unseen by the mountaineers.

THE MIGHTY HEIGHTS ABOVE THE TRAIN



AN IMAGINARY VIEW OF THE TRAIN RUNNING THROUGH TUNNEL UNDER THE ALPS

More than a mile below the tops of the mighty mountains rushes the brilliantly lighted train, with its load of perhaps five hundred passengers. The artist here shows us an imaginary section under the Alps, with children above, all unconscious of the fact that, could they but see through the solid rock, the train would appear below, like a fiery serpent boring its way through the black mass beneath them.

BLOWING UP A MOUNTAIN FROM INSIDE

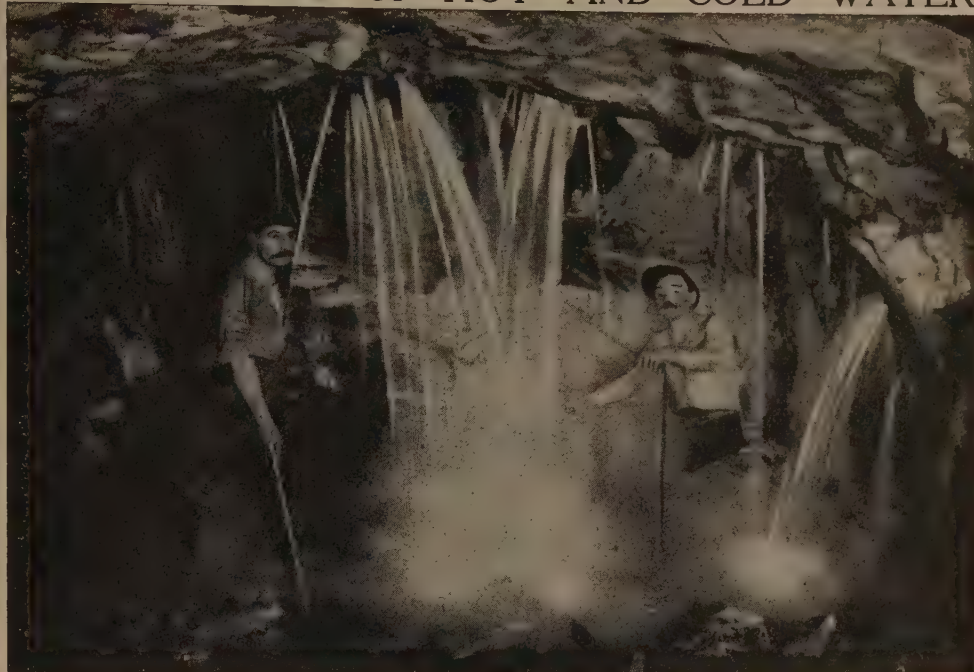


The great tunnel was made by blowing a passage through the mountains with explosives. After drills had bored holes in the face of the rock, cartridges were inserted and a man set light to them, as shown.



In firing cartridges, a time-fuse was used—a match that would burn for some time before exploding a cartridge—that the workmen could get to a place of safety. Here we see the tunnel after an explosion.

HIDDEN RIVERS OF HOT AND COLD WATER

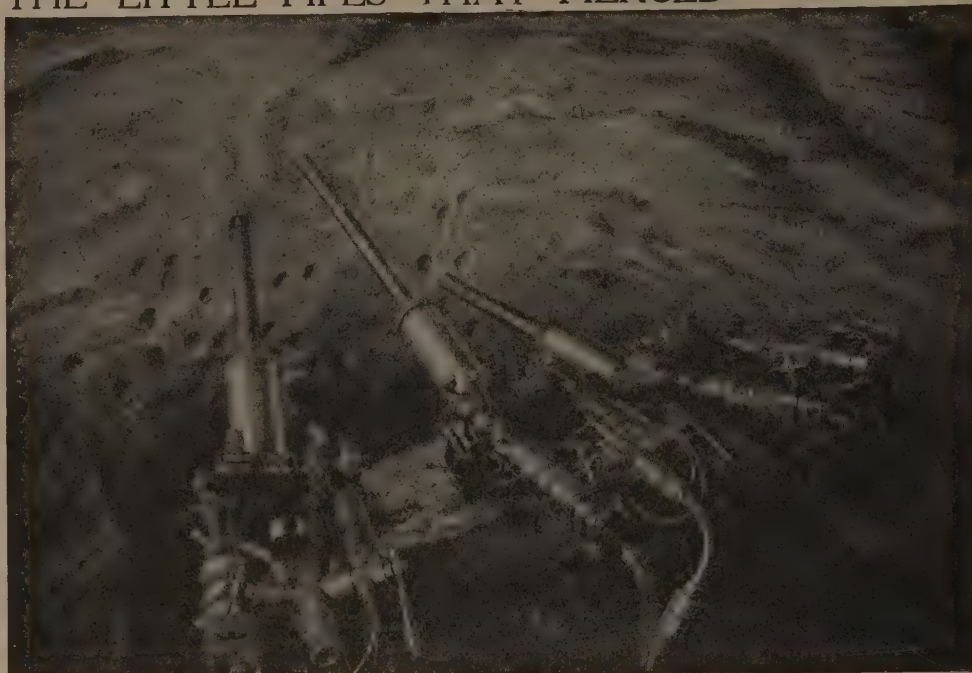


After blowing away the rock, the men were often in danger of being drowned by intruding water from springs that had been let loose. Sometimes the water was very hot, like that shown in this picture.



Many times the springs rushed in like a torrent, and here we see a cold spring that was tapped, pouring 15,000 gallons of water a minute into the workings. This caused a delay of several months in the work.

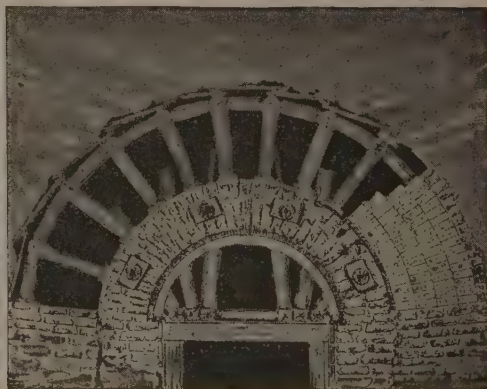
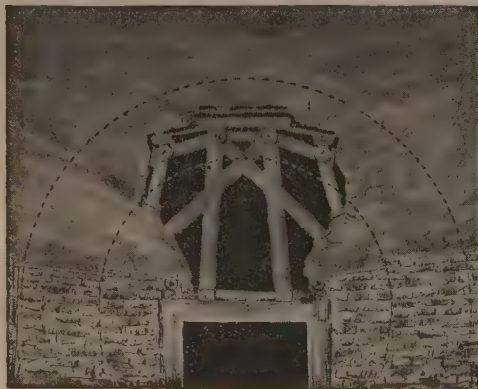
THE LITTLE PIPES THAT PIERCED THE ALPS



It is really to these wonderful machines that we owe the tunnel. By means of a stream of water driven at tremendous pressure, a little pipe with a jagged end is turned round and round, eating away the rock.

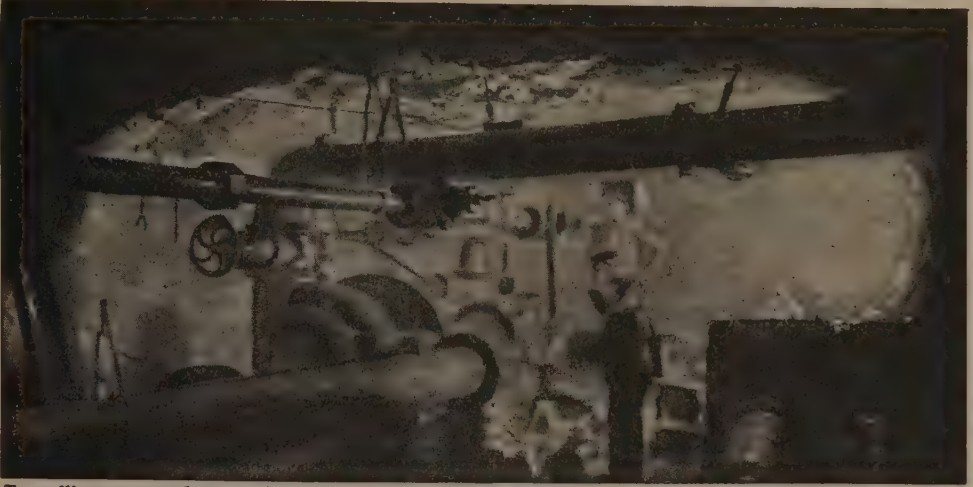


For a great part of its length, two passages were excavated, as shown here, and then the dividing wall was removed. This plan rendered easier the ventilation of the tunnel and the removal of inrushing water.



As the passage was made through the mountain, the rocky roof was held up by huge timbers, as shown on the left. Then steel frames with more timber were erected, as on right, and stone walls were built in.

WATER PUMPED OUT AND AIR PUMPED IN



Tunnelling was made possible by the work of huge pumps like the one shown here. Vast volumes of water that poured in had to be pumped out, and a constant supply of fresh air had to be pumped in.



Here water that has burst into the tunnel is being driven to the mouth by a great pump. Flooding was one of the greatest troubles during the work.



Not only was air driven in for breathing purposes, but the locomotives used in the making of the tunnel by the workmen were driven by compressed air.

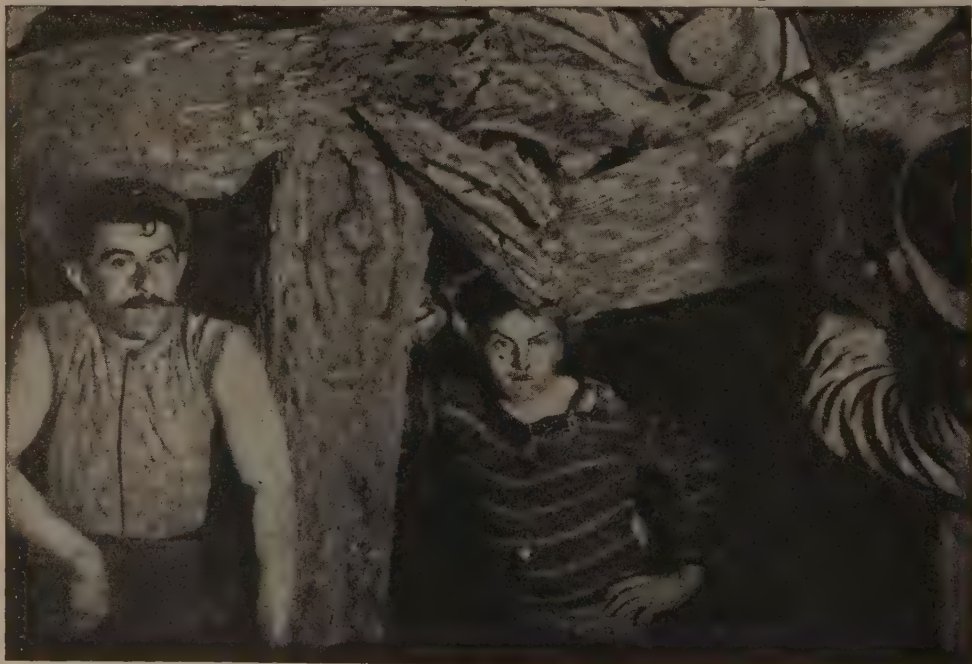


In the heart of the mountains, especially where the hot springs were tapped, heat was so intense that only by having sprays of cold water kept playing upon the walls, was it possible for men to work.

A HORSE IN THE HEART OF A MOUNTAIN



This picture shows a horse inside the Alps. Our forefathers would have laughed at such an idea. Owing to the difficulties of photographing in the tunnel, the front of the horse is larger than it should be.



While the tunnel was being bored, the roof was supported by huge wooden beams; in some parts the pressure of water and loose rock was so great as to break massive beams, and even bend steel girders.

A THRILLING MEETING INSIDE THE ALPS



By means of a theodolite, which means "to see the way plainly," the workmen were able to start boring on both sides of the Alps, and they met in the middle. The last wall of rock is about to be pierced.



This shows the most thrilling moment in the making of the tunnel. The workmen on the Italian side have just pierced the last rocky barrier that separates them from their Swiss comrades.

WHERE THE TRAINS COME BACK TO LIGHT



The Simplon Tunnel, the longest in the world, runs through the Alps from Brigue in Switzerland to Iselle in Italy. This picture shows Brigue, and on the left can be seen the double entrance to the tunnel.



This is the Iselle entrance to tunnel. In boring this passage, one of the world's greatest engineering feats, 3,740,000 holes were drilled, 1,496 tons of dynamite exploded, and 1,229,500 cubic yards of rock excavated.

CONTINUED ON PAGE 6233.

THE CAPITOLS OF TWO SOUTHERN STATES



Situated at the end of a broad street in the pleasant little city of Montgomery is the capitol of Alabama. Here the delegates from seven southern states met in February, 1861, and formed the Confederate States of America. The seat of government was soon changed, however, to Richmond.



This is the Capitol of Mississippi at Jackson, a very dignified building evidently modelled after the National Capitol at Washington, though with many changes. If you will study the pictures of Greek architecture given elsewhere you will see how much our public buildings have been influenced by men who lived more than two thousand years ago.

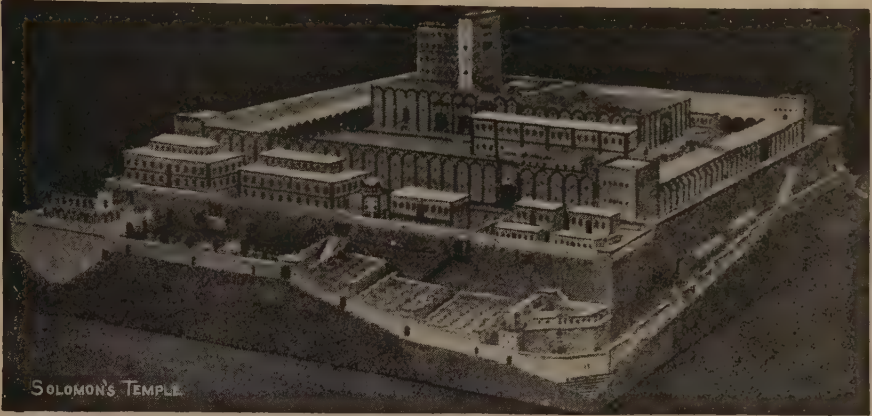
Pictures from Brown Bros.

HANNAH DELIVERS SAMUEL TO ELI



Hannah had vowed that if God would give her a son she would give him to His service. Her prayer was answered. The good woman remembered her vow, and as soon as she was able she brought the infant, whom she had named Samuel, to the old priest, Eli, and gave him up to the service of the Tabernacle.

This beautiful picture is from the painting by Mr. F. W. Topham



SOLOMON'S TEMPLE.

THE SCATTERED NATION

CONTINUED FROM PAGE 6144.

THE "Book of All Countries" has now described the principal countries of the world and the people who live in them. We have read of England and the English, France and the French, of Russia and the Russians — to name only a few — and given pages of text and pictures to many very small countries with few inhabitants. Yet we have omitted one of the most important peoples of the world.

We cannot find their country on the map, for they have no separate country of their own, but are scattered over the whole world. They are to be found on every continent and in almost every country. In America they are Americans; in England they are English; in the German Empire they are Germans, and yet they have not been swallowed up by these great nations.

Usually when people come to live in a country, their children intermarry with the natives of the country or with other immigrants and in a few generations the original blood can hardly be traced. Many American citizens can find among their ancestors, Englishmen, Frenchmen, Germans, Irishmen or Scotchmen who came here years ago. The people of whom we speak have not done so but are yet distinct. Still, some of them are among

the best citizens of the countries in which they live.

Who are these people and where do they come from? They are the Hebrews, commonly called the Jews, and their story is perhaps the most wonderful in all history. There is no other tale like theirs. If you will turn to the map on page 3875 and will get your Bible, we shall soon find out some things about them. Here is the beginning of the story as told in the Bible.

THE BEGINNING OF THE PEOPLE

Long, long ago, around a city called Ur of the Chaldees, some of the descendants of Noah lived, among them Abram, and his wife, Sarai, with their flocks and herds. The Lord appeared to Abram and told him to go away from his country into the land of Canaan and promised that he would make of his descendants a great nation.

Abram obeyed and removed to the country we now call Palestine. We cannot tell here all the occurrences, but you can find the story in the Old Testament. Abram was promised a son and told to call himself Abraham and his wife Sarah. The son was born and called Isaac. He married his cousin

Rebecca and they had two sons, Esau and Jacob. The latter secured the greater part of his father's property by a trick, and married his two cousins, Leah and Rachel, and had twelve sons. One of these, Joseph, his father's favourite, was sold into Egypt as a slave by his jealous brothers who did not like the way their father favoured him; and there, because of his wisdom, he finally became Prime Minister and the real ruler of Egypt. After a time, because of famine, Jacob and all his sons and their families were moved to Egypt, where land was given them, and where they increased greatly in numbers.

Years afterward, the Egyptians became jealous of them and the rulers inflicted many hardships upon them, though they would not let them go out of the land. At last a great leader, called Moses, arose, and the children of Israel determined to leave Egypt and seek the land promised to Abraham. Finally they were allowed to go, and left Egypt, but for forty years remained in the Wilderness between Egypt and Palestine, where the Lord appeared several times to Moses and gave him laws for the people. The Bible says that the Ten Commandments were given to Moses in this way.

HOW THE CHILDREN OF ISRAEL CAME TO THE PROMISED LAND

After the death of Moses, a brave and skilful general, named Joshua, led them into the "Promised Land," where they contended for possession with the heathen tribes, sometimes conquering, sometimes losing, but always increasing in numbers. A tabernacle for worship was set up and priests were chosen to offer the sacrifices. To this period belonged Gideon, Samson and the prophet Samuel. After a time they decided that they must have a king and Saul was chosen. One of Saul's lieutenants was a young man, David, who became prominent because, while a young shepherd boy, he had succeeded in killing with a sling and a stone the great champion of the Philistines called Goliath.

Saul became jealous of David and several times sought his life. Finally David and some companions rose in rebellion against Saul and were able to conquer part of his territories. Saul and his sons were slain in a great battle with the Philistines, and David became king of Israel. There was much fierce fighting for a time,

but at length the heathen tribes were forced to obey and the kingdom grew more powerful.

SOLOMON, THE WISE KING WHO BUILT THE TEMPLE

Many interesting events occurred during David's reign, but we cannot stop to tell them now, — not even the sad story of Absalom, his favourite son, who rebelled. At the death of David, his son Solomon became king, and under him the kingdom reached its greatest wealth and power. He built at Jerusalem a temple for the worship of the Lord; he sent ships to every port of the world, and built great public works. The fame of his wisdom reached the ears of far-away rulers, who came to talk with him.

All of Solomon's great works cost much money, however, and at his death the people hoped that their taxes might be lightened. Solomon's son, Rehoboam, who succeeded him, was a proud and arrogant young man with high ideas of the power of a king and threatened to make their lot harder. Under Jeroboam, the northern part of the kingdom revolted and became the independent kingdom of Israel, leaving only the southern part, including Jerusalem, called the kingdom of Judah, faithful to Rehoboam. This division took place, as we count time, about 975 B. C., that is, nearly twenty-nine hundred years ago.

THE FALL OF THE NORTHERN KINGDOM

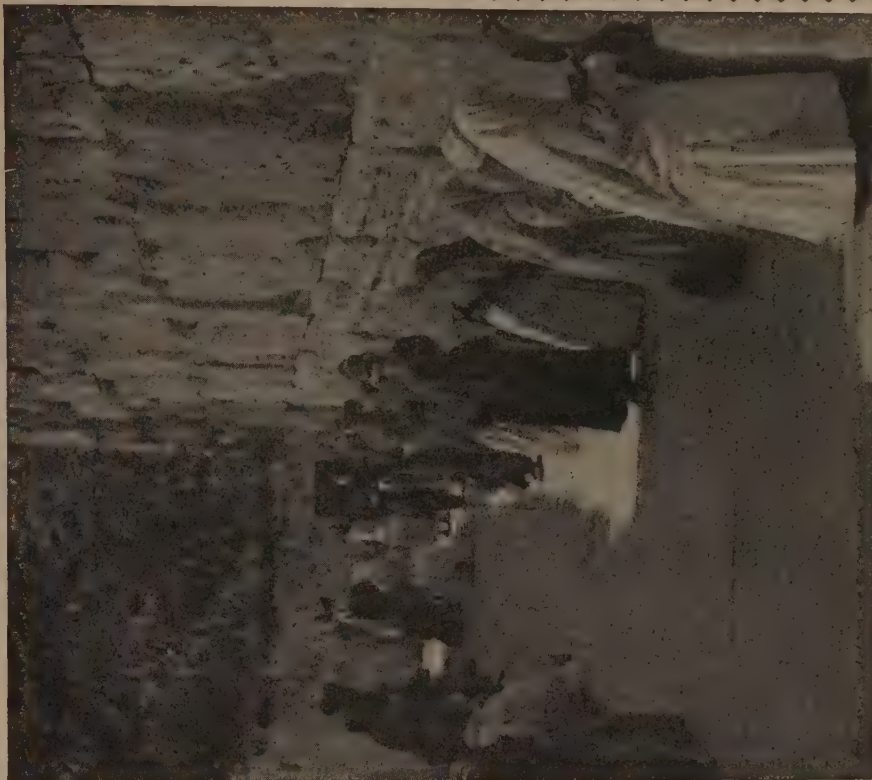
For about 250 years, the story of the two kingdoms is not a happy one. Many of the rulers were bad, some were idolaters, and there was much fighting. Sometimes the two little kingdoms were at war with each other and sometimes with the stronger nations about them. Egypt and Assyria at times demanded tribute, and finally, about 721 B. C., Sargon, who was a general of Shalmaneser, ruler of Assyria, and his successor, captured Samaria, the capital of the northern kingdom, and carried away many of the inhabitants to his own country.

What became of them no one can say, though men have tried to prove many curious things. Some have said that these "Ten Lost Tribes of Israel" somehow came to America and became the ancestors of our Indians; some have thought that perhaps the Japanese are their descend-

WHERE THE GREAT TEMPLE OF SOLOMON STOOD



Solomon built a strong foundation for the temple on Mt. Moriah. Now the spot is occupied by a magnificent Mohammedan mosque, shown in the centre of the picture. Other smaller mosques stand on the great raised platform. Ruins of the great castle built by the later kings may also be seen in the neighbourhood.



To this part of the great foundation wall of the platform built for the temple, the Jews living in Jerusalem come every Friday to mourn the departed grandeur of their holy city. Nearly two-thirds of the inhabitants of Jerusalem are Jews, but the government is entirely in the hands of the Turks.

ants; some have thought that the Irish come from them; and many other theories just as absurd have been taught. It is probable that, in their scattered state, they mingled with the people with whom they lived and finally lost their religion and forgot their ancestors. Their lands were taken by colonists sent out from Assyria.

THE SOUTHERN KINGDOM IS DESTROYED

The kingdom of Judah endured for more than a hundred years longer, though for a time it was dependent upon Assyria and then upon Egypt. Some of the rulers were bad men and the people often fell into the worship of the heathen idols such as Baal and Ashtoreth. One great king, Josiah, restored the temple, and for a time things were more hopeful. The prophet Jeremiah, however, said that trouble was coming and warned the people to repent thoroughly of all their sins. Finally, about 606 B. C., Nebuchadnezzar, King of Babylon, which was now the great power in the East, conquered the country, though he allowed the king to remain as his vassal. Many of the wiser Jews, among them the great Daniel, were sent to Babylon to serve the king. Soon the people revolted, and in 586 B. C. Jerusalem was destroyed and many of the inhabitants were taken to Babylon. The governor whom Nebuchadnezzar had left in charge was killed by a member of the old royal family and the remaining Jews fled to Egypt.

EZRA AND NEHEMIAH TRY TO BUILD UP THE KINGDOM AGAIN

In Babylon many of the Jews became important people, and after Cyrus, King of Persia, had conquered the city, he was persuaded to send those Jews who wished to return, to Jerusalem. This was 536 B. C., seventy years after the city had been taken. Later another large company, under Ezra, returned to their old home and soon Nehemiah, a pious Jew, but a favourite of the Persian king, was made governor. Esther, a young Jewess, even became the wife of a later Persian king.

Then for a long period the little province was tossed back and forth among the kings who rose to power. It was overthrown by Alexander the Great, who granted the inhabitants many privileges. After his death, when his great empire

had fallen apart, hapless Judæa was a cause of quarrel between Egypt and Syria, for more than a hundred years. Finally it fell into the hands of Antiochus of Syria, who massacred many of the inhabitants and sold others as slaves, and defiled the temple. Their persecution became more than they could bear, and under Judas Maccabeus, a wonderful general, they almost freed their country from foreign tyrants. Unfortunately he was killed in battle, and the work was completed by Simon, his brother, and in 141 B. C. Judæa again became independent. For a time there was peace and prosperity but divisions arose and the great Pompey, of whom you may have read in the history of Rome, captured Jerusalem and carried many Jews to Rome. When Pompey fell before the power of Julius Caesar, the latter made the Idumæan Antipater, a foreigner, ruler. Then his son Herod became "King of the Jews" by the vote of the Roman Senate.

HEROD THE GREAT KING OF THE JEWS

His rule was hateful to the Jews, even though he married a princess of the old line, but his strong arm and great ability enabled him to maintain his power in spite of all his enemies who carried many complaints about him to Rome. When his troubled, stormy life was over, by his will he divided his kingdom among three of his sons. The one to whom Judæa was given was hateful to the people and the Romans took control, though Herod's descendants had a shadowy rule over some of the provinces for a hundred years longer.

During Herod's reign, Jesus was born in Bethlehem, and under the Roman governor, Pontius Pilate, was put to death, but his disciples preached his doctrines and slowly his followers grew in number. At first they came from the Jews, but after Paul became so prominent among them, they admitted outsiders (Gentiles they called them). Fierce disputes between the Jews and the new sect arose, some of the Roman rulers were tyrants, and in the year 66 A. D. the Jewish war broke out.

JERUSALEM IS DESTROYED BY THE ROMAN POWER AFTER A FIGHT

The Roman Emperor, Nero, sent his best general, Vespasian, to put down the

HAMAN MEETS HIS DOOM AT A FEAST



MORDECAI AT THE KING'S GATE REFUSES TO DO HONOUR TO HAMAN



ESTHER INVITES THE KING TO A FEAST AND DENOUNCES HAMAN

Because he hated Mordecai, the Jew who sat at the king's gate, Haman plotted to destroy all the Jews in the kingdom of Ahasuerus, whose Prime Minister he was. Queen Esther, who belonged to the Jewish race, and had been brought up by Mordecai, heard of the plot of Haman and invited him to a royal feast. Haman went to the banquet, but first of all built a high gallows, meaning to ask the king to hang Mordecai upon it; but at the feast the queen denounced the Minister before the king, who ordered Haman to be hanged on the gallows he had prepared for Mordecai. Mordecai took the place of his old enemy, and so was able to protect his people.

rebellion. Terrible fighting followed, but before Jerusalem had fallen, Vespasian became Emperor and left his son, Titus, to complete the work. Titus closed around the doomed city, but its defenders fought desperately. There was no food, the soldiers on the wall were so weak from hunger that they could hardly stand. All men, women and children, struggled to keep out the invaders, but finally the walls were broken down, the Roman soldiers entered, the temple was destroyed and the captives who were left alive were sold as slaves.

Thus perished Judæa. Never to this day has it been restored. To-day the Turk rules in Jerusalem. Other countries have gone in much the same way. Assyria, Chaldea, Babylon are now but names. All that is left of them is contained in a few records which the wise men try to read. Their people were swallowed up and soon forgot the glories of the past.

WHY HAVE NOT THE JEWS DISAPPEARED?

Here is the strange, the wonderful difference between Judæa and all the rest. The kingdom of Judæa was destroyed, but the Jews are a vital force to this day. Never in history have there been so many of them, never have they been so influential and so powerful as to-day. What is the reason for this marvellous difference?

Some wise Jews say that the long captivity in Babylon is partly responsible. Before this time they had often forgotten the Lord and turned aside after strange gods; they forgot the Law of Moses, and neglected their religious duties. In Babylon they were in a strange land. Though many succeeded in business and others held high places in the state, they felt that they were strangers. Their religion, the fact that they were Jews, the "chosen people," became more and more important. They thought about it, talked about it, and the feeling grew stronger. The rules of conduct grew stricter and they took a pride in obeying them. Learned men discussed the Law, "The Torah," and the interest in all the sayings of the great teachers became intense.

Not all the Jews in Babylon returned to Jerusalem: many remained there, and as business called them, travelled to different cities and settled there. What is known as the "Dispersion," that is, the

scattering, began, and has never ceased to this day.

HOW THE JEWS WERE SCATTERED OVER THE WORLD

After Jerusalem was destroyed by Titus, most of the inhabitants were taken by their new masters to Italy or to the Roman colonies in France and Spain. Permission was given, however, to a famous rabbi or teacher, Johanan ben Zakkai, to open a school at Jabné, or Jamnia. From this school went out many teachers, all of whom worked to make all Jews feel that nation and religion were one, that all were brothers no matter how widely scattered. There were other schools at Babylon and Alexandria, for example, and all did their work well.

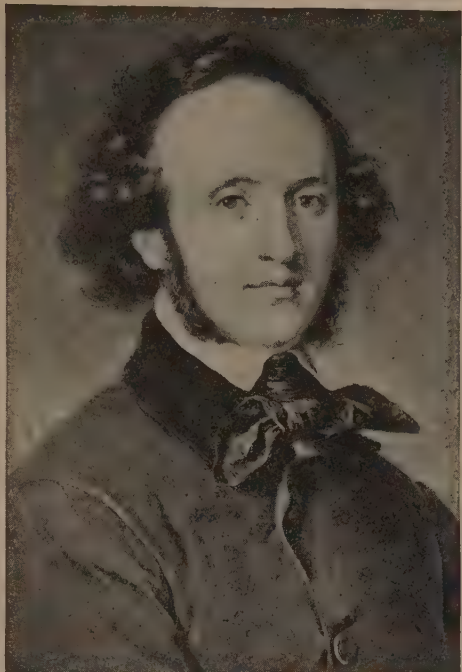
They did not give up their hope of again gaining Jerusalem, and several times strove fiercely in arms against the Roman power, which did not at first treat them so harshly as might have been expected. When Christianity became the state religion of the Roman Empire under Constantine, as you may read elsewhere, their lot became harder, except as their wealth protected them. The Mohammedan power was generally friendly, and in Spain they became very important. Jewish physicians were believed to be the most skilful, Jewish traders and bankers were the favourites at many courts, and Jewish scholars and teachers were the companions of the wisest. Finally, however, they were forced to become Christians or else leave Spain.

THE SACRED BOOK OF THE JEWS

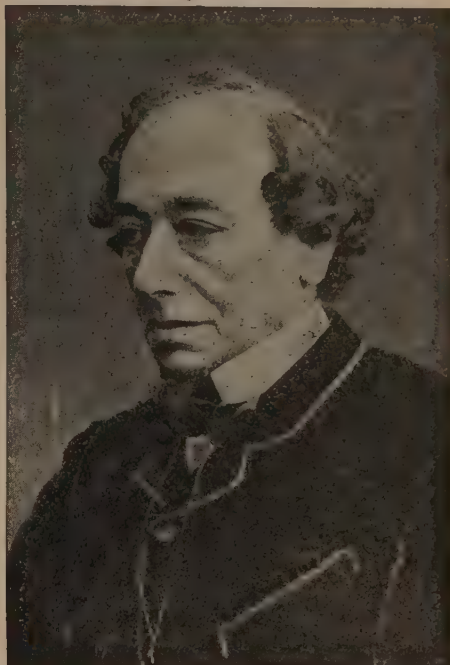
When they were forced to leave Spain and Portugal, they went to Holland, Italy or Turkey. For a time the princes of Germany protected them, but as persecution grew harder, many went to Poland, which was most liberal in its treatment of them though even there they suffered much. Their sufferings, however, only made them cling more closely to the Law, and the explanations of it, comprised in their sacred book called the "Talmud." Many studied nothing else, just as some Christians have said that it is useless to have any knowledge not contained in the Bible, and strict Mohammedans refuse to study any other book than the Koran.

During the Middle Ages the lot of the Jew was very hard, but as men have grown

FOUR WORLD-FAMOUS JEWS



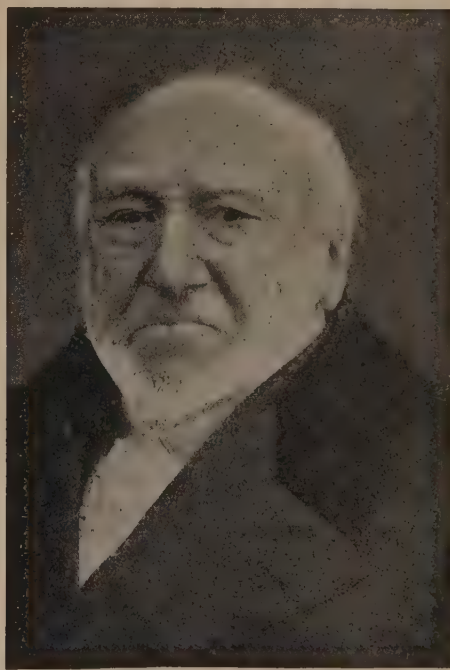
Felix Mendelssohn-Bartholdy was one of the most popular musicians of his time, and his compositions are still much admired. He was a grandson of Moses Mendelssohn.



Benjamin Disraeli became Prime Minister of Great Britain and was raised to the peerage as Lord Beaconsfield. He also wrote many novels and was a brilliant talker.



Judah P. Benjamin was a member of the Confederate States Cabinet. After the Civil War he went to England and became one of the most successful lawyers in London.



Sir Moses Montefiore was one of the greatest philanthropists the world has ever known. He used his wealth for those less fortunate than himself, but always gave wisely.

wiser they have recognised the fact that it is both foolish and wrong to persecute a man for his religious beliefs. In the most enlightened countries the laws which were unfair to the Jews have nearly all been repealed. In the United States and England, for example, they have equal rights with all other citizens.

HOW SOME COUNTRIES STILL PERSECUTE THE JEWS

In Russia, however, which now includes much of Poland, where there are more Jews than anywhere else, conditions are very little better than they were in all Europe five hundred years ago. They are not secure in the possession of their property, right of travel and settlement except in certain localities is denied them, and only a small number may attend the government schools. Worse than all these, a bloodthirsty mob may, when excited by false stories, attack and put to death great numbers of them. For this the members of the mob are seldom or never punished, and in many cases are encouraged in their dreadful work by the officers of the law.

It is a general rule that the more backward a country is in civilisation, the more harshly it treats the Jews, or, for that matter, the stranger within its territories. Those countries which are free themselves are willing for others to be free. So it is the states of Eastern Europe, which have a tyrannical government, which show the most harshness.

During the Middle Ages and afterward the Jews were often forced to live in a particular neighbourhood and to wear a special dress or, at least, a yellow badge, so that they might be recognised at once. All of this had its effect upon them, and we cannot wonder that their eyes were always turned backward, and that they lived in the past. One great man, Moses Mendelssohn, is given the chief credit of waking his fellows from their slumber. By his writings, his addresses and his personal influence he started a movement which has made the Jew a citizen of the world.

For a long time all the Jews observed the Law very strictly, though there were some differences among the different sects. After Moses Mendelssohn, however, a party known as the "Reformed" Jews arose. These say that all the

different points in the Law do not fit modern life, and so they have omitted many of the ceremonies which the "Orthodox" Jews observe. They cling, however, to the principal things, and have many synagogues in the principal cities of Europe and America.

WHAT SOME OF THE EUROPEAN JEWS HAVE DONE

To name the great men and women of Jewish blood who have accomplished so much would take a long time and occupy many pages of our book. Therefore we can name only a few, not always the greatest but some of the most interesting.

Music is an art in which those of Jewish blood have been prominent. Mendelssohn-Bartholdy, who wrote the "Wedding March" so often played, was the grandson of Moses Mendelssohn, mentioned above. Rubinstein, the great pianist, Meyerbeer and Offenbach, the composers, and Joachim, the violinist, as well as hundreds of other composers, performers and singers, have shown the Jewish talent in this art. Two of the greatest actresses of Europe, Sarah Bernhardt and Rachel, were both born Jews, and many artists are of the same race.

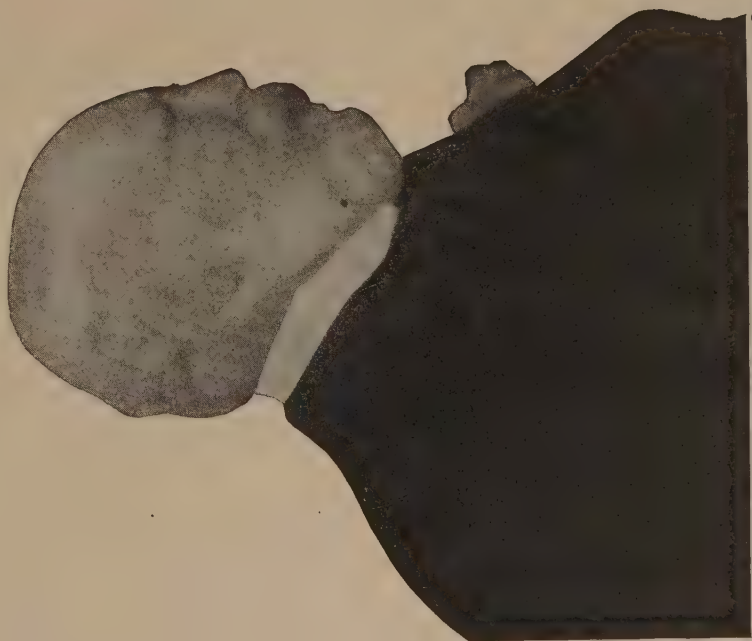
In France and Italy Jews have been ministers of state, but the most interesting of all was Benjamin Disraeli, afterward Lord Beaconsfield, who rose to be prime minister of England. Something of his life is told in another place. But though Disraeli was of the Jewish race he did not follow the religion, but became a Christian.

THE MOST POWERFUL BANKERS IN THE WORLD

Lionel Nathan Rothschild, a member of the great family of bankers which has been powerful in several European states for a hundred years, was the first Jew elected to the English Parliament. Though refused at first, the city of London continued to elect him until the law was changed and he was admitted. His son, Nathan Meyer, was made a member of the House of Lords in 1885, the first Jew to be created an English peer. Now two of the members of the British Cabinet are Jews, and members of the race have held the highest offices in the city of London.

While the Jews in Germany have not held so many governmental positions, they have surpassed those of any other country

TWO MEN WHO HOLD HIGH PLACES



Lord Rothschild is one of the best known men in England. He was the first Jew by religion to be created a peer of England, and has used much of his large fortune to help his poorer fellows. His art collection is one of the finest in England.



Oscar S. Straus has held many high official positions. He has three times been Minister or Ambassador of the United States in Constantinople, is a member of the Court of Arbitration at The Hague, has been Secretary of Commerce and Labour, and in 1912 was nominated for Governor of New York by the Progressive Party.

in scholarship, and in literature. Some of the greatest scientists, the most learned historians, and most noted scholars have been Jews. One of Germany's greatest poets, Heinrich Heine, was born a Jew.

We must not forget Spinoza, the Jewish philosopher of Amsterdam, nor Sir Moses Montefiore, who gave a great fortune to help his unfortunate fellows, nor David Ricardo, whose book on political economy, which is the science of wealth, is studied in every university. The socialist, Karl Marx, was also born of Jewish parents.

These are only a few out of thousands who might be named, but they are enough to show how talent and genius will gain fame in spite of prejudice and harsh laws.

THE JEWS IN AMERICA

It is said that some of the members of Columbus' crew were of Jewish blood, and some of the earliest settlers of the Spanish and Portuguese colonies were Jews. They were particularly numerous in Brazil, where they became very wealthy. From Brazil came a little colony to New York, or New Amsterdam, as it was then called. This city is now the greatest Jewish city in the world, as it is estimated that more than 1,000,000 of them now live in or around New York. Before the Revolution there were a few Jews in nearly all the original thirteen colonies.

The persecutions in Russia, together, with the hope of bettering their condition, have brought many thousand poor Jews to the United States during the past twenty years. Here they have settled chiefly in a few large cities, where they often work hard for small wages, and are too much crowded for health. Nevertheless their condition is steadily improving, and many are becoming prosperous. The Jews who came from other parts of Europe years ago, and their descendants, are nearly all successful.

The Jews in the United States have taken, and are taking part in every form of work. Among them are distinguished inventors, lawyers, physicians, writers, actors, scientists, musicians, artists, scholars, and successful business men, as well as mechanics, workmen and traders.

SOME OF THE POSITIONS HELD BY THIS WONDERFUL PEOPLE

Some of the most noted lawyers and judges are Jews; four have served in the United States Senate and about thirty in

the House of Representatives; some have been governors of their states; some have served with credit in the army and navy; one (Honourable Oscar S. Straus) has sat in the President's cabinet; and another one, Judah P. Benjamin, once United States Senator, was a member of the Confederate Cabinet during the Civil War. Some of our most learned college and university professors are of Jewish blood. They write books, edit newspapers, manage theatres, write plays. In short, they have a great share in the intellectual life of the country.

In business they are no less successful. Some of the most important banking houses in the great cities are controlled by Jews. The manufacture of clothing is almost entirely in their hands, and they are also largely engaged in other kinds of manufacturing. Some of the largest department stores in the great cities are owned and managed by Jews.

They are liberal givers to charity and education. They maintain orphanages for homeless children, homes for the aged and afflicted, and some of the best equipped hospitals in the country have been built by Jewish money. They have organised societies to take care of the ignorant immigrant, and to help him when work fails or sickness comes. Many Jews observe the old rule of Moses which declares that a man must give a tenth of his income to religious and charitable purposes.

The desire for the education of his children is one of the most amazing and hopeful features in the life of the Jews in the United States. Coming from countries where education was denied them, they flock to the schools in the United States. While many go no further than the grammar schools, a very large number continue in the high schools, college and universities, and often carry away distinctions and prizes from their Christian companions.

A young woman who calls herself Mary Antin recently published a wonderful book called "The Promised Land," in which she tells of the life in a little Russian town, the removal of the family to America, her struggles for an education, and her final success. It is a beautiful story, and Americans are proud to feel that their country is the real Promised Land, not only for the Jews but for all the oppressed.

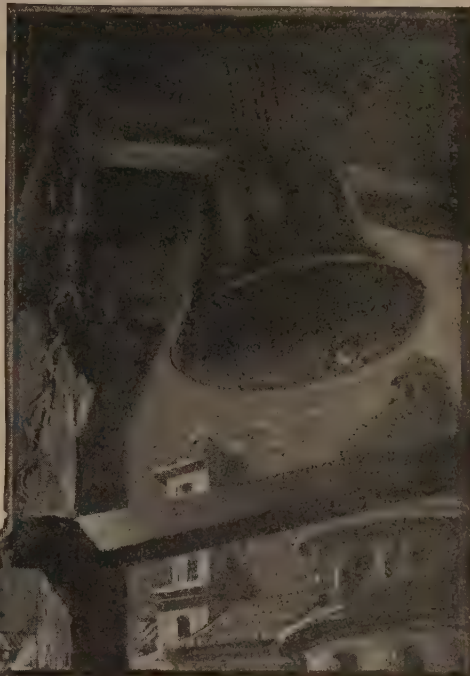
THE BELL OF ATRI: A STORY POEM—By LONGFELLOW

We have already good reason to know that Longfellow is pre-eminent among modern poets in his gift of narrative poetry, or the art of telling again in tuneful verse some old, old story. In the following he gives us, with admirable art and sympathy, a beautiful old legend of an Italian town, the more worthy of remembrance because Italy is a country in which the people as a whole have not yet learned to be kind to animals. The story is told so simply that scarcely any detail requires explanation, but it will help the young readers to know that "Giovanni" is the Italian for John, and "Re" for King.

At Atri, in Abruzzo, a small town
Of ancient Roman date, but scant renown,
One of those little places that have run
Half up the hill, beneath a blazing sun,
And then sat down to rest, as if to say,
"I climb no farther upward, come what may,"
The Re Giovanni, now unknown to fame,
So many monarchs since have borne the name,
Had a great bell hung in the market-place
Beneath a roof, projecting some small space,
By way of shelter from the sun and rain.
Then rode he through the streets with all his
train,
And, with a blast of trumpets loud and long,
Made proclamation, that whenever wrong
Was done to any man, he should but ring
The great bell in the square, and he, the King,
Would cause the Syndic to decide thereon.
Such was the proclamation of King John.

How swift the happy days in Atri sped,
What wrongs were righted need not here be
said.

Suffice it that, as all things must decay,
The hempen rope at length was worn away,
Unravelled at the end, and, strand by
strand,



Loosened and wasted in the ringer's
hand,

Till one, who noted this in passing by,
Mended the rope with braids of briony,
So that the leaves and tendrils of the vine
Hung like a votive garland at a shrine.

By chance it happened that in Atri dwelt
A knight, with spur on heel and sword in belt,
Who loved to hunt the wild boar in the woods,
Who loved his falcons with their crimson
hoods,

Who loved his hounds and horses, and all
sports,
And prodigalities of camps and courts;
Loved, or had loved them; for at last, grown
old,

His only passion was the love of gold.

He sold his horses, sold his hawks and
hounds,

Rented his vineyards and his garden grounds,
Kept on one steed, his favourite steed of all,
To starve and shiver in a naked stall,
And day by day sat brooding in his chair,
Devising plans how best to hoard and spare.

At length he said: "What is the use or need
To keep at my own cost this lazy steed,
Eating his head off in my stables here,
When rents are low and provender is dear?"

Let him go feed upon the public ways;
I want him only for the holidays."
So the old steed was turned into the heat
Of the long, lonely, silent, shadeless street;
And wandered in suburban lanes forlorn,
Barked at by dogs, and torn by briar and
thorn.

One afternoon, as in that sultry clime
It is the custom in the summer-time,
With the bolted doors and window-shutters
closed,

The inhabitants of Atri slept or dozed;
When suddenly upon their senses fell
The loud alarm of the accusing bell!
The Syndic started from his deep repose,
Turned on his couch, and listened, and then
rose

And donned his robes, and with reluctant
pace

Went panting forth into the market-place,
Where the great bell upon its crossbeam
swung,

Reiterating with persistent tongue,
In half-articulate jargon, the old song:
"Someone hath done a wrong, hath done a
wrong!"

But ere he reached the belfry's light arcade
He saw, he thought, beneath its shade,
No shape of human form of woman born,
But a poor steed, dejected and forlorn,
Who, with uplifted head and eager eye,
Was tugging at the vines of briony.
"Domeneddio!" cried the Syndic straight,
"This is the Knight of Atri's steed of state!
He calls for justice, being sore distressed,
And pleads his cause as loudly as the best."

Meanwhile from street and lane a noisy
crowd

Had rolled together like a summer cloud,
And told the story of the wretched beast
In five-and-twenty different ways at least,
With much gesticulation and appeal
To heathen gods, in their excessive zeal.

THE MILLER OF THE DEE

Charles Mackay's songs always breathe a genial spirit, and this is one of the heartiest of them. The joy of inward health and gay content is carolled so naturally by the happy miller that he is envied by a passing king. Notice how well a story may be told in easy words. Out of 201 words in these verses 177 are of one syllable, and only one—"nobody"—has three.

THERE dwelt a miller hale and bold
Beside the River Dee;
He wrought and sang from morn to night,
No lark more blithe than he;
And this the burden of his song
For ever used to be—
"I envy nobody, no, not I,
And nobody envies me!"

"Thou'rt wrong, my friend!" said old King
Hal,
"Thou'rt wrong as wrong can be;
For could my heart be light as thine
I'd gladly change with thee.

The knight was called and questioned; in
reply
Did not confess the fact, did not deny;
Treated the matter as a pleasant jest,
And set at naught the Syndic and the rest,
Maintaining, in an angry undertone,
That he should do what pleased him with
his own.

And thereupon the Syndic gravely read
The proclamation of the King; then said:
"Pride goeth forth on horseback grand and
gay,

But cometh back on foot, and begs its way;
Fame is the fragrance of heroic deeds,
Of flowers of chivalry and not of weeds!
These are familiar proverbs, but I fear
They never yet have reached your knightly
ear.

What fair renown, what honour, what re-
pute

Can come to you from starving this poor
brute?

He who serves well and speaks not, merits
more

Than they who clamour loudest at the door.
Therefore the law decrees that as this steed
Served you in youth, henceforth you shall
take heed

To comfort his old age, and to provide
Shelter in stall, and food and field beside."

The knight withdrew, abashed; the people all
Led home the steed in triumph to his stall.
The King heard and approved, and laughed
in glee,

And cried aloud: "Right well it pleaseth
me!

Church-bells at best but ring us to the door,
But go not in to Mass; my bell doth more:
It cometh into court and pleads the cause
Of creatures dumb and unknown to the
laws;

And this shall make, in every Christian
clime,

The bell of Atri famous for all time."

And tell me now what makes thee sing
With voice so loud and free,
While I am sad, though I'm the king,
Beside the River Dee?"

The miller smiled and doffed his cap:
"I earn my bread," quoth he;
"I love my wife, I love my friends,
I love my children three;
I owe no penny I cannot pay;
I thank the River Dee,
That turns the mill and grinds the corn,
To feed my babes and me."

"Good friend!" said Hal, and sighed the
while,

"Farewell, and happy be;
But say no more, if thou'dst be true,
That no one envies thee.

Thy mealy cap is worth my crown,
Thy mill my kingdom's fee!
Such men as thou are England's boast,
O miller of the Dee!"

LITTLE THOUGHTS FROM BROWNING

Put pain from out the world, what room were left
For thanks to God, for love to man?

Ferishtah's Fancies

Grow old along with me!
The best is yet to be.

Rabbi Ben Ezra

What hand and brain went ever paired?
What heart alike conceived and dared?
What act proved all its thought had been?
What will but felt the fleshly screen?

The Last Ride Together

Doing the king's work all the dim day long.

How It Strikes a Contemporary

Truth remains true, the fault's in the prover.

Christmas Eve

Man is born nowise to content himself, but please
God.

The Ring and the Book

God's in his heaven—
All's right with the world!

Pippa Passes

Here is spring!

The sun shines as he shone at Adam's fall.

The Ring and the Book

It is our trust that there is yet another world to
mend all error and mischance.

Paracelsus

Why stay we on the earth except to grow?

Cleon

You never know what life means till you die.

The Ring and the Book

What though I sink, another may succeed.

Paracelsus

We find great things are made of little things,
And things go lessening till at last
Comes God behind them.

Mr. Sludge, the Medium

What I aspired to be,
And was not, comforts me.

Rabbi Ben Ezra

Truth is within ourselves; it takes no rise
From outward things.

Paracelsus

All men are men: I would all minds were minds!

Jochanan Hakkadosh

My own hope is, a sun will pierce
The thickest cloud earth ever stretched.

Apparent Failure

The common problem, yours, mine, everyone's,
Is—not to fancy what were fair in life
Provided it could be—but, finding first
What may be, then find how to make it fair
Up to our means.

Aristophanes' Apology

What's time? Leave now for dogs and apes!
Man has forever.

A Grammarian's Funeral

LITTLE VERSES FOR VERY LITTLE PEOPLE

RHYMES AND JINGLES AND THEIR USE

WHAT is the use of Nursery Rhymes? Did any boy or girl ever ask that? Perhaps not; but it is worth asking. The answer is very simple. Just as we all like stories, so do most of us like poems, which are stories told in words that sound pleasant in our ears, and are easy to remember. But before we can learn poems we learn little verses about funny little folk, and these are called nursery rhymes, because all mothers say them to their children, and the sounds of the words are easy to bear in mind. In this part of our book we have given all the best-known nursery rhymes, many of them having clever pictures with them.

RIDE A COCK-HORSE TO BANBURY CROSS



Ride a cock-horse to Banbury Cross,
To see a fine lady upon a white horse;
Rings on her fingers, and bells on her toes,
She will have music wherever she goes.

THE NONSENSE OF EDWARD LEAR

WE are told that "a little nonsense now and then is relished by the wisest men." Many wise men have laughed at the nonsense of Edward Lear, an artist who did much serious work, most of which is now forgotten. He amused himself by drawing funny little pictures and writing funny little rhymes, which have been called "Learicks," after him; and it is those nonsense rhymes and pictures of his which are still popular, while his serious pictures and books have long since ceased to attract readers. His nonsense must be good nonsense to have lived so long. We have chosen some of his funniest pictures and rhymes to reprint here.



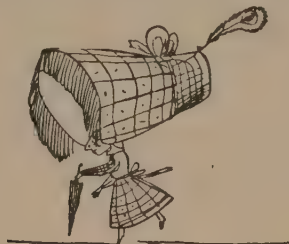
THERE was an old man of Melrose,
Who walked on the tips of his toes;
But they said: "It ain't pleasant,
To see you at present,
You stupid old man of Melrose."



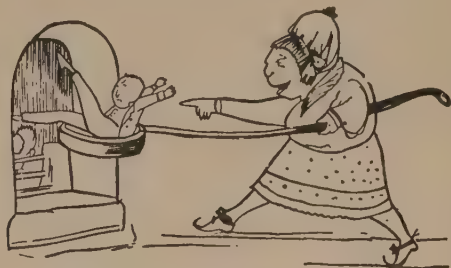
THERE was an old man of the Cape,
Who possessed a large Barbary ape;
Till the ape, one dark night,
Set the house on a light,
Which burned that old man of the Cape.



THERE was an old man of Jamaica,
Who suddenly married a Quaker!
But she cried out: "O lack!
'I have married a black!"
Which distressed that old man of
Jamaica.



THERE was a young lady of Dorking,
Who bought a large bonnet for
walking;
But its colour and size
So bedazzled her eyes,
That she very soon went back to Dorking.



THERE was an old man of Peru,
Who watched his wife making a
stew;
But once, by mistake,
In a stove she did bake
That unfortunate man of Peru.



THERE was an old person of Cheadle,
Was put in the stocks by the
beadle;
For stealing some pigs,
Some coats, and some wigs,
That horrible person of Cheadle.



THERE was an old man who said "How
Shall I flee from this horrible
cow ?

I will sit on this stile,
And continue to smile,
Which may soften the heart of the cow."



THERE was an old man who supposed,
That the street door was properly
closed ;

But some very large rats
Ate his coats and his hats,
While that sleepy old gentleman dozed.



THERE was a young lady of Ryde,
Whose shoe-strings were seldom
untied ;

She purchased some clogs,
And some small spotty dogs,
And frequently walked about Ryde.



THERE was a young lady of Troy,
Whom several large flies did
annoy ;

Some she killed with a thump,
Some she drowned at the pump,
And some she took with her to Troy.



THERE was a young lady whose bonnet
Came untied when the birds sat
upon it ;

But she said : " I don't care !
All the birds in the air
Are welcome to sit on my bonnet ! "

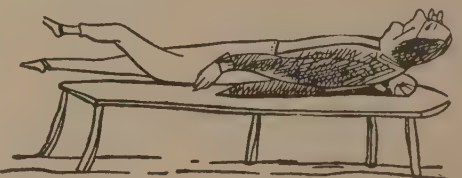


THERE was an old person of Anerley,
Whose conduct was strange and
unmannerly ;

He rushed down the Strand,
With a pig in each hand,
But returned in the evening to Anerley.

THERE was an old man of Moldavia,
Who had the most curious be-
haviour ;

For while he was able,
He slept on a table,
That funny old man of Moldavia.





Bluejackets loading a big gun inside the barbette of a battleship

CONTINUED FROM PAGE 6214.

THE GREATEST NAVY IN THE WORLD THE LIFE OF AN ENGLISH SAILOR AT SEA

A THOUSAND years ago and more, in the days of Alfred the Great, the English found out that it would be useful to have ships built for fighting, in order to drive away the Danes before they landed, instead of waiting to fight them after they got to shore.

But there was no Royal Navy then. Some of the ports on the south coast were ordered always to have fighting ships in readiness, but their business was to keep down pirate ships which sailed in the Channel. However, when England was at war with France, there were some famous naval battles, and more of the ports were ordered to supply ships, which was fair enough, because it was chiefly towns on the coast which were in danger of attack.

Some of the kings — Edward I., Edward III., and Henry V. — saw how useful fighting ships could be, and they all had a sort of navy. But in those days every merchant ship had to carry fighting men and archers in case of meeting with pirates, so that a number of ships could be brought together when more were wanted.

But it was Henry VIII. who first built a regular fighting fleet, and

Englishmen in his time had already found out that skilful sailors could work sailing vessels, so that such ships were more useful than the rowing vessels which were used in earlier times. Elizabeth had a small Royal Navy, but the ships were good. When the Spanish Armada came, the fleet which went out to meet it was made up only in part from the queen's ships. Most of the vessels were supplied by the ports or by private individuals.

After that the Royal Navy grew, and in the time of the Commonwealth the fleet of the Government was very strong. From that time forward, all the fighting was done by the Royal Navy, which was maintained and paid for out of the taxes.

In the last fifty years of the seventeenth century there was not much to choose between the Dutch navy and the English. There have been times when it seemed that the French might make their fleets a match for those of Great Britain. Lately the navies of the United States and Germany have been growing faster than any other, but the Dutch are the only people who have ever fought England single-handed on the seas with success since the Spanish Armada.

Sailors join the navy, as soldiers join the army, because they choose it, but in the old days the navy had the right of forcing any sailor to serve on board the king's ships in war-time; the "press-gang" used to capture them. But all that has been stopped, and the service is now voluntary. It was only during the nineteenth century that steam took the place of sails and ships were built with armour, and now they are all armoured.

THE GREAT FIGHT FOR THE MASTERY OF THE SEA

At this moment there is no sight in the world quite so striking as a naval review, for which mighty warships are gathered together, from those great floating fortresses which are called Dreadnoughts down to the submarine and small torpedo craft which are meant to shatter hostile fleets.

Now, why has England taken so much trouble to build up a mighty navy? If we look back down the past centuries, we shall see that in the reign of Queen Elizabeth Spain had a larger navy, though when she sent her great Armada she learned that English seamanship made a smaller fleet and smaller ships far more than a match for her own. Then, in the next century, the Dutch—though a much smaller nation than the English—had a fleet which could fight on even terms; so that it would have been hard to say which was the better.

WHY ENGLAND NEEDS THE STRONGEST FLEET IN THE WORLD

Let us look for the reason why the British fleet is more powerful than all others, as a great fleet is enormously costly, and no one would build one simply for the sake of saying that it was the biggest.

In the first place, it is because the United Kingdom is a group of islands. Every nation has to protect itself against the attack of other nations in case quarrels should arise which can be settled only by fighting. But if we look at the map of Europe, we see that every other nation has a long land frontier; an enemy can attack it without going to sea.

That is not the case with England.

If attacked at all, it must be by sea, and so the attempt has been made to build a navy so strong that no invading force will ever be able to land on English soil. This is the first reason for building a strong navy.

Again England has a large population, but a small area, and cannot begin to produce food enough for the people. This food must come from other parts of the Empire or from other nations. Without a strong navy the ports might be blockaded by the ships of a nation at war with England and the people would suffer from hunger.

A third reason is that if England should wish to invade the country with which she might be at war, she must have a navy large enough to protect the ships carrying soldiers to the other country.

Another point is that even if an invading army might somehow slip past the defences and get into England, a strong navy would be able to prevent their country from sending ammunition and other supplies, without which not much damage could be done.

THE SHIPS THAT GUARD COLONIES AND COMMERCE

But still that is not all, for the British Empire is all over the world, and if England were content merely to guard her own coasts, an enemy might leave them alone, and yet send an army across to Canada, or Australia, or India, or South Africa, and do all the harm he could in those distant parts of the world. The nation must protect distant lands with ships, and be able to drive an enemy's fleets off any part of the ocean, and at the same time to keep enough ships near home to guard her own coasts.

More than all else, also, English wealth and strength depends upon commerce, the trading which is carried on across the seas. If war came with anyone, the enemy would wish not only to send armies against England, but to send out ships to seize goods at sea.

These are the chief reasons why England feels that she needs more than any other nation to have the biggest and strongest fleet in the world.

CONTINUED ON PAGE 6285.

THE COAL THAT MAKES THE SHIP GO



Life on a battleship to-day is very different from what it was in Nelson's time. Then the seaman had to be a real sailor, and know how to manipulate sails. Now a warship is a huge floating machine, and every seaman is a mechanic. Before the ship can move it must take in thousands of tons of coal.



The coal is swung on board by a crane, as shown in the top picture, from the quay, or coaling vessel which comes alongside, and the sacks are quickly unhooked by the men, as seen here, and carried away.

CLEANING THE SHIP AFTER COALING DAY

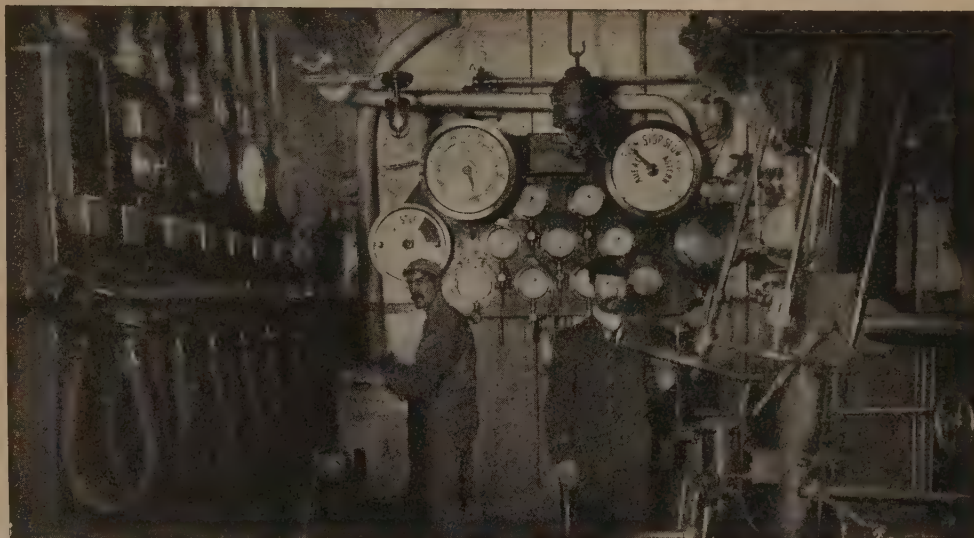


Coaling a warship is a very dirty task. The men look like negroes, and the deck is covered with a fine coating of coal dust, and has to be thoroughly cleaned. Here we see the men washing funnel and masts.



An army of men wash down the decks, scrubbing the boards until they shine like a kitchen table that has never been used. Nowhere in the world are floors kept more spotlessly clean than on a great warship.

THE LIVING HEART OF A GREAT SHIP



The great throbbing engines are the heart of a battleship. They give life to the floating giant and send it through the waves at the rate of more than twenty miles an hour. Here we see the engine-room.



The engines of the latest battleships do the work of 30,000 horses, and all the time they are moving the furnaces must be fed. This is the stoke-hole of a battleship, where the coal is shovelled into the furnaces.

HOW THE SAILOR LEARNS HIS LESSON



Seamen must understand the weapons with which they would, in time of war, hurl destruction at the enemy, and here men are learning the principles of torpedo construction in the schoolroom on their ship.



The best-equipped warship would be useless if the men did not know how to work the guns and hit the mark at which they aimed; so a great part of the bluejacket's work consists of gun drill.

UNFOLDING THE SAILS OF A WARSHIP

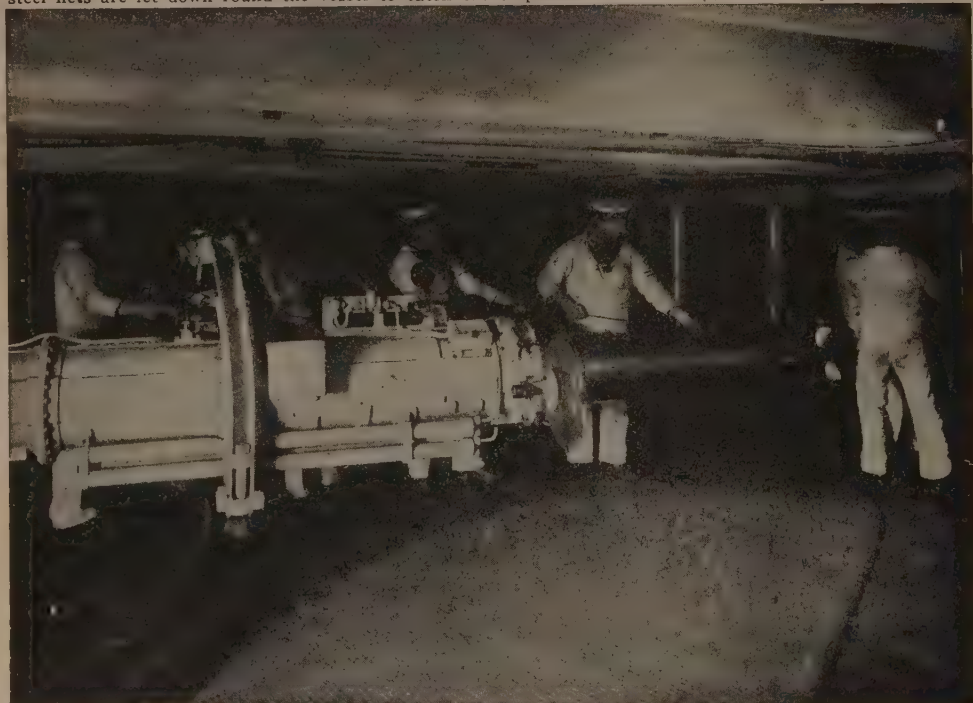


Although all large warships are now driven by steam, part of the seaman's business is still to understand the furling and unfurling of sails, and here we see men at sail drill on one of the older types of warship.

A STEEL NET TO CATCH TORPEDOES



A battleship is a floating fortress, whose object is to hurl destruction at an enemy, but it must defend itself also. A single torpedo fired by a smaller ship might sink it in a few minutes; so, in time of war, steel nets are let down round the vessel to catch the torpedoes of the enemy, and thus protect the ship.

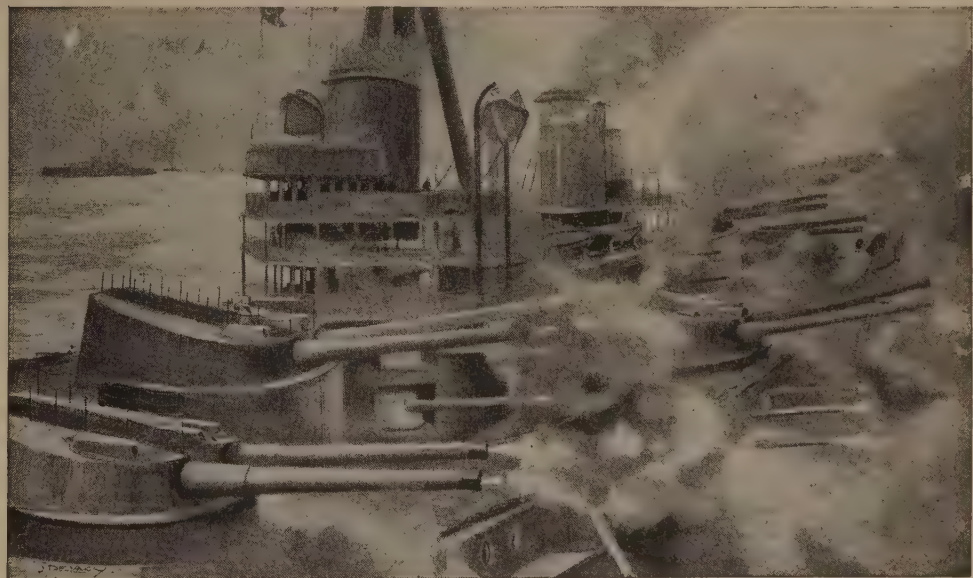


The torpedo is a most delicate and elaborate piece of machinery, and is fired from a "tube," or gun, which is also a triumph of engineering skill. In this picture the men are learning how to fire a torpedo.

THE BATTLESHIP ASLEEP AND AWAKE



These pictures give some idea of the marvellous perfection to which the terrible mammoths of destruction have been brought by the latest science of the twentieth century. Here the battleship is asleep and quiet.



The commander in the conning-tower touches a button, giving the order to fire, and in a moment the great battleship awakes and becomes the most terrible thing made by the skill of man. Every gun pours forth flame and smoke, and more than four tons of death-dealing missiles are hurled in a moment at the enemy.

THE SCRAN-BAG OF A BATTLESHIP



When Jack can, in the midst of work, take a rest on a warm afternoon, he throws himself down on the deck and sleeps. He must not leave his things about, or they will suffer the fate of the things below.



Jack is compelled to be neat. If he leaves any garment about, it is seized and put into a sack called the scran-bag, "scran" meaning rubbish. Once a month the contents are sold to the bluejackets, as shown.

SHIPS THAT PASS IN THE NIGHT



The battleship must not only be watchful by day, it must be effective at night; in order to keep keen look-out for stealthy enemies, it is fitted with wonderful searchlights that can be flashed in all directions.



Magnificent and imposing as is a battleship by day, when its steel walls and powerful armament are plainly seen, it is, perhaps, even more impressive by night, when its massive outlines and sombre figure stand out dark and ominous. The possibilities of these great fighting vessels are appalling.

The photographs on these pages are by Gale and Polden, Stephen Cribb, and others

JACK'S FIRST DAY AND LAST DAY AT SEA



It is a thrilling day-when the anchor is taken up, and the battleship sails for distant seas. On the voyage home Jack makes a long white pennant, with a foot for every day at sea, and this is flown from the mast, a gilded bladder keeping it aloft. The pennant originated in the whip that was once tied to the mast to show that the English had whipped their enemies. On the right is a pennant 600 feet long.



This is how the men go on board when their ship is out at sea. They climb a rope and walk along a boom that juts out from the side, and thus reach the deck. They are very expert in walking the boom.

CONTINUED ON PAGE 6285.

WHAT THIS STORY TELLS US

THE two great sports of the United States are baseball and football. Baseball is played by a great many more people, for thousands of boys and young men play the game at every opportunity. Fewer play football, but the public interest in the game is quite as great. The following description gives a general idea of the game, and will enable the reader to understand.

HOW TO PLAY FOOTBALL

CONTINUED FROM PAGE 6068.

DURING the autumn months of every year thousands of American boys and young men are playing football. It is the favourite sport in colleges and high schools, and the newspapers print long accounts of the games, some of which are attended by many thousand spectators.

It is a rough game and one who is not strong should not attempt to play it. Even strong boys are sometimes hurt, and, therefore, some parents and some schools object to the game, and do not allow their boys to play. However, if only strong boys, wearing proper clothes, play the game, there is not much danger of serious injury. Players should always wear regular padded football clothes, and strong shoes which fit closely around the ankles. Nose-guards made of rubber and shin-guards are often worn, but are not absolutely necessary.

Football is a very old and widely-played game. Several thousand years ago, we know, it was played by the Greeks. Through the Romans it was passed on to the Britons. The English gave it to America, where it has in the last thirty-five years developed into a game distinct from any played elsewhere.

American football is played upon a rectangular field 330 feet long and 160 feet wide, enclosed by white lines marked on the ground. The lines at the ends are called the goal lines. In the middle of each of these is erected a goal, consisting of two upright posts 18½ feet apart, with a horizontal cross-bar 10 feet from the ground. Parallel with the goal lines, white lines run across the field 5 yards apart. These are the official dimensions. In games between teams of boys, however, the field is often smaller, depending on the space available; and the 5 yard lines, which are merely an aid to the referee in judging distance, are usually omitted.

The ball is an inflated rubber bladder, with a leather cover, usually made of pigskin. It is not round, but drawn out lengthwise into rounded points at oppo-

site ends, to make it more easily handled. The game is played by two sides of eleven men each. Seven of these men, who form the Line, take positions beside one another, facing the goal line to be attacked, as shown on the diagram. The man in the middle is called the Centre. At each side of him stands a Guard; outside of the Guards come the Tackles, and outside of these, the Ends. The remaining four men compose the Back-field. Of these, the Quarter-back stands directly behind the Centre; two Half-backs take their positions at the sides of, and a little further back than the Quarter. Still further to the rear, and behind the centre of the line, is the Full-back's place. This is, in general, the arrangement of the men when in possession of the ball and lined-up for an attack. When on the defence, while the line-men keep their positions, the backs shift to meet different plays by their opponents, sometimes playing far to the rear in readiness to receive a kicked ball. Because they take so many different positions, we do not show the defence on the diagram.

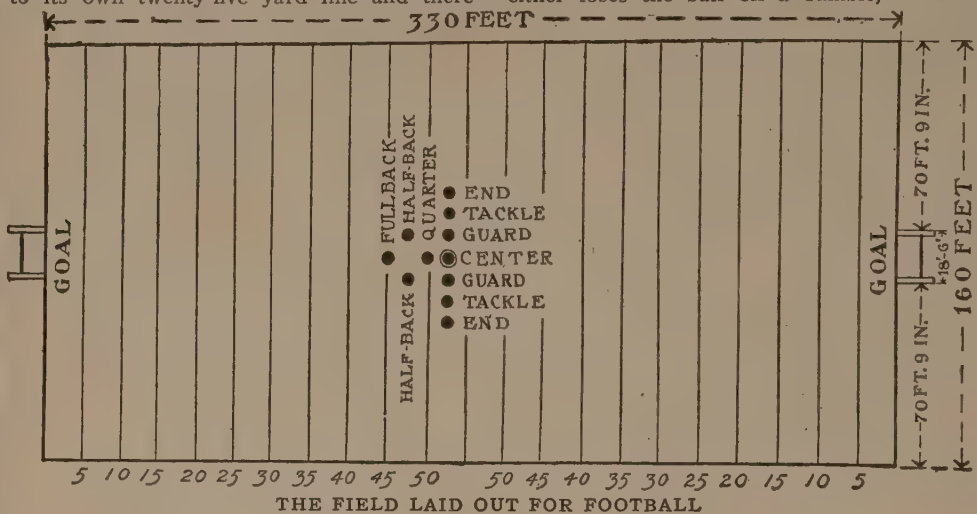
The standard length of time of a game is sixty minutes of actual playing. This is divided into four periods called "quarters," of fifteen minutes each. Between the first and second quarters, as well as between the third and fourth, there is an intermission of two minutes. The period of rest between the second and third quarters lasts fifteen minutes.

Scoring is accomplished in two ways: by touching the ball down behind the goal line, or by kicking it over the cross-bar of the goal. When a player succeeds in carrying the ball across the opposing team's goal line and there touches it to the ground, it is called a *touch-down*, and counts five points. When a team has made a touch-down, the ball is brought out into the playing-field, and one of the men of that side tries a *place-kick*, that is, kicks the ball from the ground where it is held in position by one of his team-mates. If the ball passes

Copyright, 1912, by M. Perry Mills

over the cross-bar, it is called a *goal from touch-down* and adds one point to the score. A *field-goal*, which counts three points, may be made without having scored a touch-down, by sending the ball from the playing-field, over the cross-bar, by means of either a place-kick or a *drop-kick*. A drop-kick consists in dropping the ball from the hands and kicking it just as it begins to rise from the ground. When any member of a team is forced to carry the ball behind his own goal line and there touch it down, his team is said to make a *safety*. This counts two points for its opponents. If, however, a team recovers, behind its own goal line, a ball kicked across by the *opposing side*, a safety is not counted. This is called a *touch-back*; it does not add to the score. After a touch-back, the defensive side has the privilege either of carrying the ball out to its own twenty-five yard line and there

into the charge of the *centre* of the runner's side. His team-mates line up at the sides of the centre on a line even with the ball and parallel with the goal line in the manner described before when speaking of the players. Opposite them, their antagonists line up. Both sides are now ready for a *scrimmage*. At the signal, the centre snaps the ball to the quarter-back, who passes it to the man in the back-field who has been called on to advance the ball by *rushing*. The rusher tries to carry the ball either through the line or around one of the ends. When he has been stopped, the ball is said to be *down* for the second time. Four such *downs* are allowed, in which to make a gain of ten yards. When ten yards have thus been gained, it is again called *first down*. Thus, the team continues its progress toward the enemy's goal, unless it either loses the ball on a fumble, or fails



THE FIELD LAID OUT FOR FOOTBALL

putting it in play, or of kicking out to its opponents from any point within its own twenty-five yard line.

When the game is to begin, the captain of one side chooses which goal his team will defend. The other side places the ball in the centre of the field in readiness to *kick-off*. The players of this side line-up even with the ball. One of their number, after a short run, kicks the ball into the territory of the enemy, who have scattered about their half of the field in readiness to receive the kick. The man who catches the ball starts on a run toward the hostile goal, protected as much as possible by his comrades, and striving to evade his opponents, who have come charging down the field as soon as the ball has been kicked. If the runner succeeds, by dodging, in making his way through the ranks of his opponents and crosses their goal line, he has scored a touch-down. Usually, however, he is tackled and thrown. When his course is thus arrested, the ball is said to be *down*. In that case, the ball is given, at that spot,

to gain the required ten yards in four tries. In either case, the ball comes into the possession of the other side, which now makes its attack in a similar way. Often the ball is advanced by kicking, especially when the attempts at rushing have yielded so little ground that success in making ten yards by the fourth down seems improbable. One of the back-field then *punts*, that is, drops the ball and kicks it before it strikes the ground. A *forward-pass* may be made from scrimmage formation by any man in the back-field, and may be received by an *end*, or by any man who was in the back-field when the ball was put in play. Such a pass may be intercepted by any opponent.

Regarded as *fouls* and forbidden are: off-side play, that is getting in front of the ball; holding or tackling any one but the man with the ball; tripping, striking, or kicking a man; "piling up" on a "downed" player. Boys who wish to play the game in earnest should get the book of rules and study them, and better still, get some person who knows the game to teach it to them.

WHAT TO DO IN CASES OF DROWNING

BEING A LESSON IN FIRST AID TO THE INJURED

ONE of the most important things for all First Aid students to know thoroughly is how to bring about artificial respiration—that is, how to make a person who has apparently stopped breathing breathe again. Unless we know this we cannot render useful service in cases of drowning, suffocation, or gas-poisoning.

There are five different methods of restoring the breathing of an insensible and apparently lifeless person, and they are known after the names of their inventors as Sylvester's, Laborde's, Howard's, Marshall Hall's, and Schäfer's methods. Each is good, and in certain cases has its own advantages, so that we should know them all.

SYLVESTER'S METHOD. Place the patient on his back on a flat surface inclined upwards a little from the feet; raise and support the shoulders on a firm cushion or folded garment placed under the shoulder-blades, so that the head will fall well back, as in the first picture; remove all tight clothing from the neck and chest; bare the front of the body as far as the stomach; and cleanse the mouth and nostrils.

Now kneel at the patient's head, grasp the forearms first below the elbows, and draw the arms steadily upwards towards you, keeping them stretched out in that position, with the elbows touching the ground, for about two seconds. The position is shown in the first picture. By this movement air is drawn into the patient's lungs.

Still grasping the arms, push them back firmly upon the chest, pressing them on each side of the breast-bone, as in the second picture. This expels the air. After two seconds repeat the movements, and keep on doing so, causing the patient alternately to inspire and expire the air, about fifteen times in a minute. If there are two persons present to render first aid, while one is restoring breathing in the way described, the other should open the patient's mouth, draw forward the tongue, and keep it projecting beyond the lips as far as possible. He should also, if possible, excite the patient's nostrils with smelling-salts or snuff, or tickle his throat with a feather. It is

also a good thing to flick the chest with a wet towel or to rub it with a dry flannel.

LABORDE'S METHOD. Sometimes, owing to broken ribs, for instance, Sylvester's method cannot be followed. In that case Laborde's method should be tried. The patient is placed on his back or side, the lips and mouth are cleansed, and the tongue is seized and pulled forward as far as possible, being held in that position for two seconds.

Then it is released. The operation is repeated about fifteen times every minute, and to prevent the tongue slipping from the fingers it should be held with a handkerchief. Laborde's method is used in the case of children suffering from suffocation.

HOWARD'S METHOD. The patient is placed face downwards, his chest being supported on a firm cushion or rolled-up garment, and his head resting down on his hand so as to allow the water to run out of the mouth. We then press in upon the patient's back three or four times every few seconds to press the water out of the lungs.

Then, when the water is out, we rapidly turn the patient over with his face upwards, the rolled-up garment being just below his shoulder-blades. His head hangs down, and his hands are placed above his head.

Now we kneel down, with the patient's hips between our knees, and, fixing our elbows against our hips, we seize the lower part of the patient's chest, and with all our weight and strength press gradually forward for three seconds, until our mouth is nearly over the patient's face. Then, with a push, we suddenly jerk ourselves back upon our

knees. After three seconds' rest we do this again, and then repeat the movement about ten times a minute, until the patient breathes naturally. We should persevere for at least an hour, and when natural breathing begins we should not interrupt the natural breaths, but should do our movements in between. Howard's method can be combined with Sylvester's, the two movements keeping time with one another. Very often our efforts will meet with success.



INSPIRATION BY SYLVESTER'S METHOD



EXPIRATION BY SYLVESTER'S METHOD

MARSHALL HALL'S METHOD. The patient is placed on the ground, with his face downwards and the forehead resting on one of his forearms. After a few seconds he is raised slightly while a folded garment is placed for support under the chest. To restore breathing we turn the body gently on the side, and then quickly turn it back on the face again, repeating the movement fifteen times in a minute.

Then we turn on the other side, and back on the face in the same way, doing this fifteen times in a minute, and so we go on repeating till breathing is restored. Each time that the body is turned back on the face, we press firmly and evenly, with the hands one each side of the patient's back, between and below the shoulder-blades, stopping the pressure before turning the patient on to his side again.

Two persons are needed for Marshall Hall's method, as one must attend to the patient's head and arm while he is being turned backwards and forwards. When he is lying on his face, his forehead must always rest on his forearm. The explanation of the method is simple. When on his chest, the weight of the patient's body forces the air out, but when he is turned on his side the pressure is removed, and the air can enter the lungs.

SCHÄFER'S METHOD. We lay the patient face downwards, but with the head turned to one side to leave the nose and mouth free. No pad is placed under him. Kneeling at one side, as in the picture on this page, we place the palms of our hands on his lower ribs, with the thumbs nearly touching each other, and then, leaning forward, we press firmly, though not very heavily, straight down upon the back and lower part of the chest. This drives out the air, producing expiration. Then, drawing back our body rather rapidly, we relax the pressure without removing our hands, and inspiration is produced. This process we continue, repeating the movements at the rate of about fifteen to the minute.

Whichever of the five methods we adopt, we continue the movements until natural breathing is restored.

In cases of drowning it is best to loosen the clothing, clear the mouth and throat of the patient, and then apply the Marshall Hall method. As soon as the air-passages are free from water, Sylvester's method should be used, and if there are two or more skilled helpers it should be combined with Howard's method, as explained.

While breathing is thus being restored, someone should go for blankets and hot-water bottles, and also for a doctor. When

the method used is successful in restoring natural breathing, the patient should be wrapped in dry blankets, and the limbs should be rubbed briskly towards the heart to restore the circulation of the blood. Hot flannels, and hot-water bottles or hot bricks should also be applied to the body.

As soon as the patient can swallow, a little hot tea or coffee or beef-tea should be given, and he should then be put to bed, kept warm, and encouraged to sleep. If there is difficulty in breathing, hot poultices or fomentations or mustard-plasters should be placed on the chest and between the shoulders. The patient should be looked after carefully for a time, and if there is any stoppage of the natural breathing, artificial respiration must at once be repeated.

Of course it cannot be emphasised too greatly that in cases of apparent drowning the process of restoring breathing by artificial methods must be applied without a moment's delay. Whether the patient be in a boat or on shore, he should simply have such clothes loosened or removed as confine the chest or hamper and interfere with the breathing. Coats and overcoats should, of course, be taken off as rapidly as possible, and if a tight jersey or vest is worn it should be ripped down the front to save time. A few moments' delay may make all the difference between life and death.

The method of restoring the breathing is the same for all

cases of suffocation. For insensibility from electric shock Laborde's method is the best. In rendering aid to a person who receives an electric shock, we must be very careful to insulate ourselves before touching the patient. We must stand on some substance that is a bad conductor of electricity—such as indiarubber, or on a mackintosh, dry silk or cloth, dry hay or straw, or dry glass or brick. To insulate our hands before touching the patient we can use an indiarubber tobacco-pouch, or even a dry newspaper. In rescuing a suffocated person from a room full of smoke or gas, we should tie a wet handkerchief tightly over our nose and mouth, and we must crawl along, keeping low, near the ground.

If you learn thoroughly these instructions, you may some day be able to save the life of a fellow-being, perhaps one near and dear to you. There can be no doubt that every year in hundreds of cases, those given up for dead on account of drowning or suffocation might be brought back to life and restored to health, if only some one knew how such cases should be treated.



Schäfer's method of restoring breathing

HOW TO MARK YOUR NAME ON FRUIT

IF we have apple, pear, or plum trees in our garden or orchard, it is quite easy to have our monogram, or any design we fancy, marked boldly upon the ripe fruit, without the assistance of ink, pencil, or any other similar material. The printing of the design is really done by the sun, and the method to be followed is quite simple.

We cut out in paper, or thin metal foil such as chocolate is packed in, the monogram, crest, or other design that it is proposed to print upon the fruit, and then, while the fruit on the tree is still green, we stick the paper design upon it with white of egg or a thin paste. The design must be fastened upon the side of the fruit that is exposed to the sun, and when the fruit is full-size, though green. As the sun ripens the fruit, the part still exposed will become red, but the remainder covered by the paper will remain pale green or yellow, and when at last the fruit is picked the monogram or other design will stand out clearly and distinctly, and look very effective. In addition to apples, pears, damsons, plums, and peaches may also be treated in this way.



APPLE WITH MONOGRAM

If the weather is very wet, the paper designs are liable to get washed off the fruit, so that it is wise to have several papers of the same design in order that a washed-off monogram may be replaced by another exactly like it. To avoid this washing away by the rain, the paper design may be varnished, when the water will run off it; and it is not a bad idea to fix over the fruit a little wooden cap or umbrella to protect it from the rain. This, however, must not keep off the sun, or the fruit will not be properly coloured, and the monogram will not show up well.

By following this system we may cause great surprise to our friends, for, if we are giving a tea-party, and know sufficiently long in advance, we may provide fruit bearing the initials of the different guests; and, unless they are in the secret, they will wonder greatly how we have managed to do this. A large fruit-grower, who supplies table-fruit to one of the most fashionable restaurants in New York, always brands the fruit in this way with the monogram of the hotel.

WHAT TO DO IN A THUNDERSTORM

THERE are some people who, when they hear the roll of thunder, are terribly alarmed, and run to hide themselves in a dark cupboard or cellar. These people are often laughed at for their fear, and, as a matter of fact, there is not the slightest danger to be feared from thunder, which is simply the report and echo of the electric spark caused by a discharge of electricity between two clouds, or between a cloud and the earth. But, on the other hand, we should be on our guard against lightning, for there may be danger in a thunderstorm from the lightning flash, and those people who, out of sheer bravado, expose themselves unnecessarily to the lightning during a storm are simply foolish.

There are three kinds of lightning. Sheet or summer lightning appears as a glare, lighting up a whole cloud, and is either a very feeble discharge of electricity, or the reflection of a more powerful discharge many miles away. This kind of lightning is often seen on warm evenings, and is quite harmless. Forked lightning is a bright, powerful flash, that takes a wavy or zigzag path. In this kind of lightning the spark or flash may pass between clouds that are ten miles apart. Another form of lightning less often seen is ball lightning. It appears as a ball of fire moving slowly through the air, and exploding when it touches the ground. It is very dangerous, but is fortunately rare. This is what people call a thunderbolt, but no solid object, such as is supposed to fall, really comes to the earth.

It is always useful to know what to do in a thunderstorm. In the old days people used to ring the church bells as hard as they could, in the belief that the sound would charm away the thunder and lightning, but this, of course, was merely superstition. We want to take more practical precautions. First of all, if we are indoors, the best thing to do is to keep away from those things that are good at conducting electricity, and might conduct it to us. Heated air, smoke, and soot are good conductors, and so also are metal grates, fenders, and fire-irons. Therefore, we should not stand near the fireplace. It is wise also to keep away from the window, because of its iron bolts and fastenings. Mirrors are good conductors, because of the quicksilver on their backs. The safest part of a room during a thunderstorm is the middle, and it is always good to stand on a thick hearthrug if the lightning is very powerful, as a dry rug, being a bad conductor of electricity, would insulate our body—that is, prevent the electricity passing to it. People who run to cupboards against the walls are doing a foolish thing. The middle story of the house is safer than the cellar or the top of the house.

If we are out of doors, there are also some wise precautions we may take. When riding in a train or omnibus or carriage it is best to sit up as straight as possible, and not lean back, as the electricity might pass through the sides or back of the vehicle.

If we are out walking, it is foolish to go and take shelter under a tree; in fact, it is

unwise in a thunderstorm to stand near any tall object, which is a poor conductor of electricity. As the human body is a good conductor, if the lightning struck the tall object it might pass through our body in preference to the object, owing to the good conducting properties of our body. It is not dangerous to stand near a lightning conductor, as some people think, for that is a better conductor than the human body, and so the electricity would not leave the metal, but would pass down it in preference to anything else.

To stand under a tree is the worst thing we can possibly do in a thunderstorm. No objects are struck so often as trees, and though some kinds are more liable to be struck than others, probably no kind of tree is free from the danger. Sycamore, holly, elder, and hornbeam are not often struck, but they are occasionally; while oak, ash, larch, and elm are probably among those most often struck by lightning, and the oak is usually shattered. Some people deliberately stand under a beech or poplar during a storm in the belief that these trees are never struck, but, as a matter of fact, they are often injured by lightning.

If we are out in a storm in an exposed place, and cannot get indoors, we should take

care to keep as far as possible from tall trees and other prominent objects. It is wise, too, in a storm to keep away from crowds of people and from groups of animals, as it is said that the ascending column of warm vapour from the breathing of so many living creatures is liable to conduct the electricity to the place from which the column rises. If we are out in an open field when the lightning is very powerful, and cannot get into proper shelter, it is well, if we have a waterproof cape, to stand on the dry side of this, and fold it up round our feet. Gutta-percha does not conduct electricity, and the cape, if dry, insulates us in the same way as the hearthrug does in a room. We should never stand near a pond or large puddle in a thunderstorm, as, the water being a good conductor, the lightning may strike it, and if we are close by, we also, being higher up than the water, might receive the discharge.

It is never wise to put up an umbrella, especially one of the modern kind with a metal rod, if we are alone in an exposed place, like a common, as the umbrella might act as a lightning conductor. Nor should we have much metal about us in a thunderstorm. If we are indoors and the lightning is severe, we should take off our watch.

FLASHING MESSAGES AT NIGHT

ANYBODY can make a little instrument by which he can flash messages to his friends at night across considerable distances. The idea of the instrument is something like that of the heliograph which soldiers use for sending messages to one another in daylight. The word heliograph really means to write by the sun, and the instrument consists of a little looking-glass that can be twisted about on a stand so as to catch the sunlight, and make flashes that are seen at a distant point.

The instrument we are going to make is very simple. First of all we obtain from the grocer a wooden box about a foot high by nine inches wide, and nine inches deep; the box should have a hinged lid. Inside this we are going to place a lamp, so we bore in the top a few holes, half an inch in diameter, to allow the fumes or smoke to escape. Then in the bottom of the box, which will be the front when it is stood up on end for use, we make a round hole one inch in diameter. Now on the inside of the lid of the box we hang a reflector of some kind to strengthen the light.

We also want a shutter on the front of the box that can be used to open and close the round hole through which we shall flash our messages. The best thing for the shutter is a piece of sheet tin, zinc, or thin wood. It should be about eight inches long, and two and a half inches wide at the end covering the hole, tapering down to about an inch at the end which will serve as handle. A hole must be punched near the middle, and it is fixed in position with a screw, so that it will cover the round hole

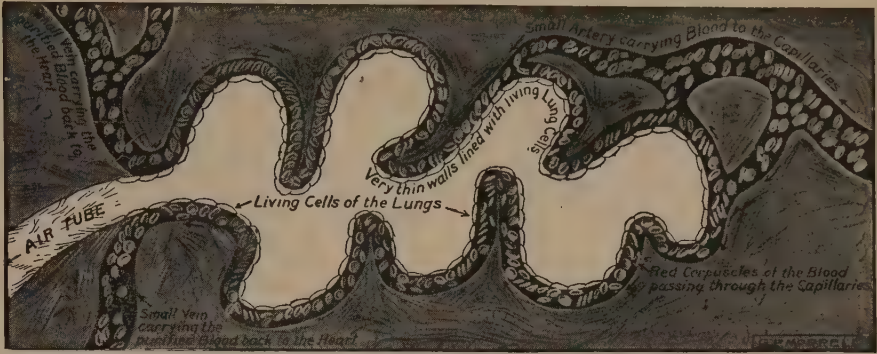
in the box. The cover must work quite easily and smoothly on the screw.

Inside the box we place a lighted candle or small lamp, and our instrument is then ready for use. Where a house is lighted by electricity, we can take a lamp on a long wire and put it into the box. Any code of signals can be arranged between two friends, but the most sensible thing to use is the Morse alphabet, giving a short flash for a dot and a long flash for a dash. To make the flashes we hold the shutter by the handle, and work it up and down over the round hole. A little practice will make this quite easy.

Our friend, if he wishes to carry on a conversation with us over a distance, must have a similar instrument. With two flash-boxes it is possible for two friends to talk at night a distance of half a mile.

We begin by placing our boxes each in a window facing the window of the other, and a few rapid flashes indicate that we are going to begin the conversation. When a boy knows the Morse alphabet, which can be found in our book, it is astonishing how quickly, with a little practice, he can flash out messages and read the replies.

If one is confined to his room recovering from sickness, yet not well enough to be out, or if he is quarantined because some one in the family has a contagious disease of some sort, a flash-box can be the source of much pleasure as by it the prisoner can talk to his friends, almost as easily as if they were actually present. A moment's thought will bring up many other uses for this box, which will be a never-ending source of amusement.



One of the tiny air-chambers in the lungs, magnified to show how its walls have air on one side and blood on the other. Little muscles expand and contract the air-chamber alternately.

CONTINUED FROM PAGE 6182.

THE WONDERFUL RIVER OF AIR AND THE WAY IN WHICH IT KEEPS JACK'S BLOOD PURE

EXCEPT in special need, when Jack is compelled to ventilate his house through his front door, all the air he uses must pass through a complicated filter, warmer, and moistener; which we call his nose. Suppose we have reached the back of his nose, and find a supply of very nearly pure, moist, warm, almost dustless air.

There is some distance yet to go before the air reaches Jack's bellows, or lungs. First it comes to the opening of his great windpipe, which runs down the front of his neck. This pipe must always be kept open, of course, and so it is stiffened with little rings of gristle, or cartilage.

We can readily feel these in our own windpipe just before it leaves the neck and plunges into our middle story. But above the rings there is something much larger, and this is Jack's voice-box, or speaking-machine. Its proper name is the larynx—the first syllable pronounced to rhyme with bear. Now, before the air which has passed through Jack's filter can reach the windpipe it must pass through the voice-box.

There is a little risk here, nevertheless. Jack's larynx is, so to say, a new idea, and has had to be con-

trived as an addition to Jack's house. So far as the inlet of air goes, his voice-box is simply a difficulty. It does no good, and it makes no use of the air which goes in—only of the air which comes out.

There are two difficulties, really. First, the air-current and the food-current cross each other's paths—which is by no means the best arrangement. Jack's wind-pipe lies in front of his gullet, and every morsel of food and every drop of fluid that enters his gullet has to jump over the opening of his voice-box.

To help this business, his voice-box is provided with a movable lid, attached to the back of his tongue, and when he swallows this lid partly closes over the opening to the voice-box, and partly diverts the current of food to one side, so that nothing goes the wrong way. But, of course, while Jack is breathing, his voice-box must be freely open, and therefore it is quite certain that, whatever happens, he must not try to breathe and swallow at the same time; but sometimes he may laugh—which requires a good in-breath—when he is swallowing, and then he is likely to choke. A choking fit may be unpleasant, but at the same time it is

very interesting. Of course, whatever happens, Jack's ventilation must go on, and therefore his ventilation shaft must be kept clear. When he chokes something has got into the ventilation shaft, and immediately the whole body gives up all other interests and occupations and sets itself to expel the obstruction at once.

For this purpose Jack's house is provided with a large number of powerful servants, or muscles, which can all squeeze upon his chest: No sooner does the ventilation system come to hold an intruder than the sentinels in its walls send up a message to one of the lower telephone exchanges — not to Jack himself — and the order goes forth to cough and cough and cough again, until the obstruction is blown away. Cells inside the windpipe set to work to produce a smooth fluid, so as to make the passage of the intruder easy; and the body will devote itself with such force to this important task that Jack's eyes may fill with tears.

THE NARROW WAY THROUGH WHICH THE AIR MUST PASS

When the air, apart from such accidents, has passed into the voice-box, it comes at once to a narrow chink, and through this it has to pass. Such a chink would never exist in such a place, were it not for a very peculiar purpose.

The edges of this chink are made of elastic fibres, and they are there placed so as to make sounds when Jack's air strikes against them in coming out. So we shall return to them, but meanwhile we only note that these vocal cords, as they are called, which line the chink, are so placed that they can be swung apart whenever Jack takes a breath. And that is what happens. Before every breath that Jack takes, from the cradle to the grave, the unsleeping brain-cells give orders to the muscles which stand beside his vocal cords, and then the muscles swing the cords apart, and the air can enter.

Sometimes, when Jack's house is very young, certain abominable burglars, called the microbes of diphtheria, get into his throat and produce a thick white stuff which may cover over this chink, and then Jack is in danger of

death. But nowadays men call in horses to save Jack in such a case. Tiny doses of what the microbes make are given to horses, and their cell-chemists make something which will dissolve this dangerous stuff. The medicine the horses make is called the diphtheria anti-toxin, and it saves the lives of thousands of children all the world over every year.

THE HUNDREDS OF TUBES WHICH CARRY THE AIR TO THE LUNGS

Now, the air has a clear passage down the windpipe until the windpipe splits into two, one going to the right and the other to the left. One branch supplies the right lung and the other supplies the left lung. These branches divide over and over again, like a tree, until at last the air is led, by hundreds of little tubes, to the very stuff of the lungs themselves.

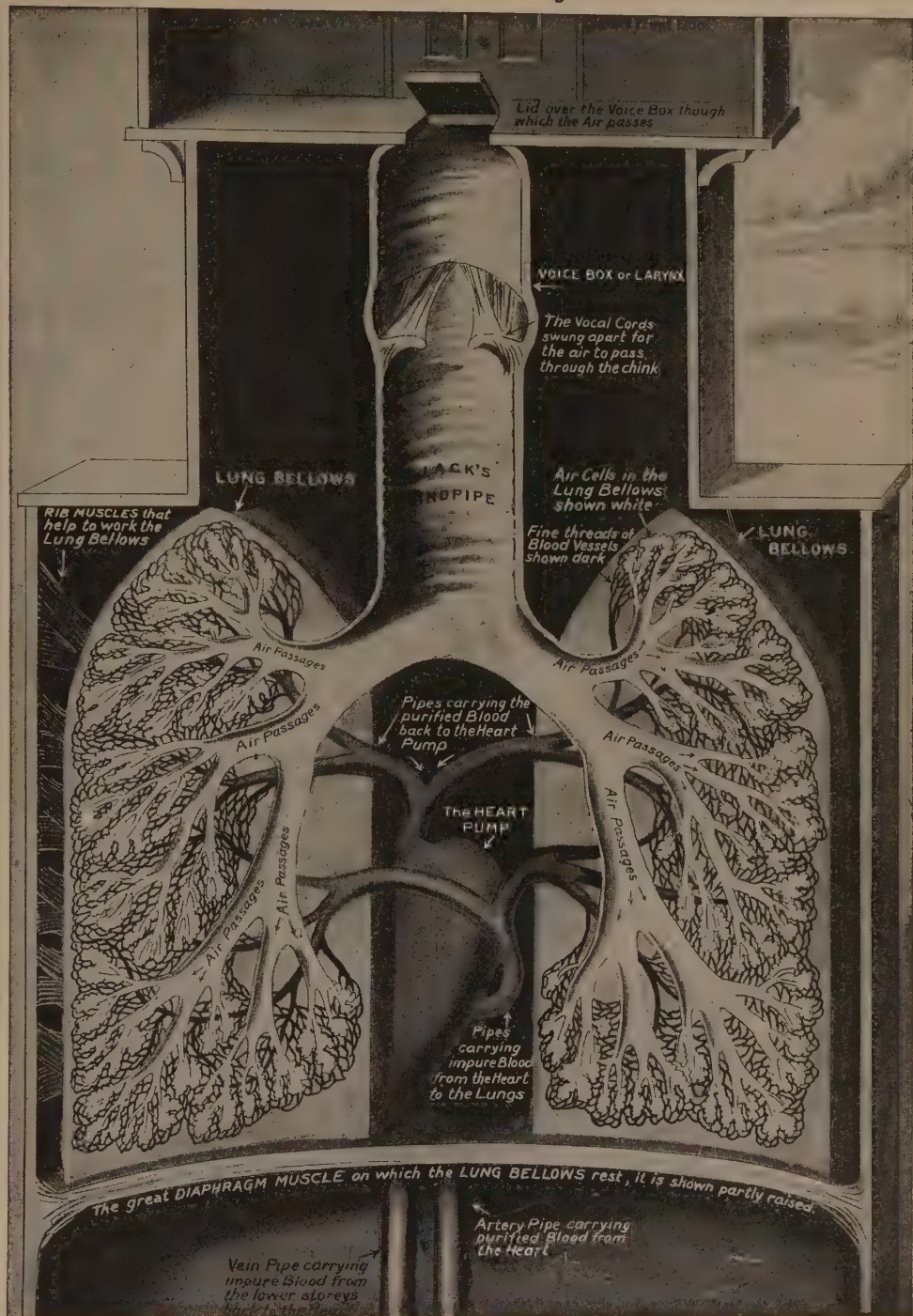
The lungs are certainly a pair of bellows, but we find that they consist of a kind of sponge of thousands of tiny hollow spaces, where the air enters. These little spaces are lined by the living cells of the lungs, and on the other side of this lining of cells is a tremendous number of tiny blood-vessels carrying blood from Jack's heart. So what we find is air on one side, blood on the other, and a layer of living lung-cells in between.

THE LITTLE VISITORS TO THE LUNGS AND WHY THEY COME

This blood is not bright blood, but dark blood. It has been sent to the lungs from the right side of Jack's great pump, to which it had just been returned after travelling all through his body. This blood contains a quantity of carbonic acid gas, a poison, which it has brought to the lungs from Jack's body, and it also contains more water than it needs. On the other hand, the countless millions of red cells which it contains, the air-porters of Jack's house, are empty-handed. They have no oxygen, for what they got when they were last in the lungs they have given away to Jack's body, and now they have come for more.

What happens, then, is quite simple. Through the thin layer of lung-cells there passes a double stream of gases — a stream from the air to the blood, and

THE VENTILATION OF JACK'S HOUSE



Here we see how Jack's house is ventilated. Air goes in the front door, down the voice-box and wind-pipe, and into the lungs, which are much like sponges, with thousands of hollow spaces lined with living cells. These cells lie between the air and the blood in the hollow spaces, and purify the blood by taking oxygen from the air and sending it into the blood, and by driving the carbonic acid gas and water from the blood into the air, to be breathed out again. The impure blood is always being pumped through the lungs to be purified. In the picture the blood-vessels are shown dark, and the air-passages light.

a stream from the blood to the air. The lung-cells supervise and direct them both. The carbonic acid and the unnecessary water pass into the air—we can see the water when we breathe out on to a window-pane—and the oxygen of the air passes into the blood. In order to make these two exchanges Jack has a ventilation system, and that is what we are all doing day and night without ceasing, as we breathe. We are getting oxygen into our blood, and carbonic acid gas and water out of it.

THE LITTLE RED PORTERS WHO PACK AWAY THE OXYGEN

At once the oxygen is picked up by the red porters who are in the blood for the purpose, and who can pack away a most extraordinary quantity of it. Of course, a little oxygen can be dissolved in blood just as it can in water, but Jack's house could never do, with the little amount which his blood itself would dissolve. The red porters make all the difference. Each of them can squeeze together and pack on his shoulders, so to say, an astonishing quantity of oxygen for his size.

The blood, with its air-laden porters, after leaving the lungs, returns to the left side of Jack's great pump, and is at once driven onward to supply every part of his body with air. All the red cells leave the pump in one great channel, but it soon divides, and one cell may find itself travelling through one of Jack's toes, while another may be rushing through his eye-sentinels. No part of Jack's house is forgotten.

THE GIVING OUT OF THE FRESH AIR TO ALL PARTS OF JACK'S HOUSE

In every case the walls of the blood-tubes soon become thinner and thinner. And now we can see happen exactly what happened a little while before in the lungs, except that the process is reversed. In the lungs the red porters got oxygen; now they give it. It is for this that they exist. Most of the cells of Jack's body are far away from the air, and if they are to live air must be brought to them. That is what the bellows and the pump and the red porters exist for. Each little porter hands over to the gasping cells of Jack's toes or eyes or liver or muscles the air that

they want; and then the red cells, not quite so red as they were, hasten back to the pump.

But we must not forget the carbonic acid and water. The cells want oxygen for burning. They want to get the power and the warmth, and the fuel they burn is mostly carbon—very like our coal—and hydrogen. When carbon is burnt with oxygen we get carbonic acid gas, and when hydrogen is burnt with oxygen we get water. So the cells of Jack's house are always producing carbonic acid and water. So the blood which leaves Jack's toe or eye is poorer in oxygen but fuller of water and carbonic acid, and while its empty-handed red cells scurry back to the lungs for more oxygen, it also carries these waste matters, one of which is a most rank poison, to the lungs to be got rid of.

THE OVERSEERS WHO LOOK AFTER JACK'S BREATHING

We may now consider the air which has got into the lungs, and how it gets out again. It is by no means the same air, and is also warmer than when it entered, for it has been for a little while quite close to Jack's warm blood.

The air returns by the same route all the way until it reaches the filter, where it takes a slightly different course. On the way, of course, it has to pass through the chink again, but as a rule it does so without difficulty or sound—though not so, of course, when Jack desires to speak or sing.

For us now one more question remains: What drives the air in when we breathe in, and what drives it out when we breathe out? If we notice ourselves we shall agree, assuming that we are quite well, that it is the breathing-in that costs us effort; the breathing-out seems to do itself, and that is quite true. Breathing-in, or inspiration, is like stretching a piece of elastic, and breathing-out, or expiration, is like letting it go again.

Every inspiration is done by certain of Jack's muscles, which exist for the purpose, and are all under the command of a special group of overseers in the lowest part of his brain. These give their orders for an inspiration about six-

teen or eighteen times a minute, but faster or slower according to circumstances. In fever, or if Jack is running hard, and so using up a lot of oxygen, he breathes faster. On the other hand, if Jack gives orders himself, on purpose, from his own study, and quickly takes a number of extra long breaths, he will find that for a little while afterwards he scarcely takes any breaths at all. He has no need to, for the blood and the tissues are filled with oxygen. Deep breathing is very important. By doing this we can get the stagnant air out of the lungs. Our lungs are larger than are needed for everyday use. If this were not true, we should be unable to make any unusual exertion.

It has been proved that the overseers in Jack's brain judge by the quantity of carbonic acid gas in the blood which passes through them. If it rises a little, then they hasten to deepen Jack's inspirations until its quantity falls. Their business is to keep the quantity of carbonic acid gas in Jack's blood below danger point, and to this end they watch and direct, without a pause, from his first breath to his last.

WHAT HAPPENS IN THE CHEST WHEN WE BREATHE

The chief of the muscles through which they act is the great sheet of muscle stretched between Jack's middle story and his lower story. It is called the diaphragm, and when it gets orders to contract it flattens itself so as to make much more room in Jack's chest, or middle story. Jack could not live very long if his diaphragm stopped working, and it is helped by a large number of other muscles between his ribs. These and various other muscles all have the same action as the diaphragm—when they contract they make his chest bigger.

That happens when we work a pair of bellows, and the result is exactly the same. The chest is a pair of bellows, and when it is made larger air from outside rushes in. The air outside has a pressure called the "atmospheric pressure," and directly we tend to create a vacuum, or empty space, in the lungs, the atmospheric pressure drives the air in to fill it. Some creatures

force the air in by a force-pump action, just as Jack's pump forces his blood along; but we breathe by a suction-pump arrangement.

THE MILLIONS OF ELASTIC FIBRES WHICH STRETCH WHEN WE BREATHE

When the air has entered, and the chest is deepened and widened, its walls are all in a state of stretching. The ribs are a little twisted, and the muscles are ready to return to their former shape. Further, the lungs themselves contain an enormous quantity of yellow elastic fibres, coiled up in millions and millions all through their substance, and when the lungs are stretched by the air, all these elastic fibres are stretched too, and ready to relax again. So, the instant the muscles of inspiration cease to pull, all these elastic things relax, the chest comes back to its old size, the air is squeezed out, and that is how expiration happens. Of course, we can make "forced expirations" when we deliberately use muscles to squeeze the chest. We do so when we cough, or speak, or sing, or sneeze; but ordinary expiration uses no muscles at all.

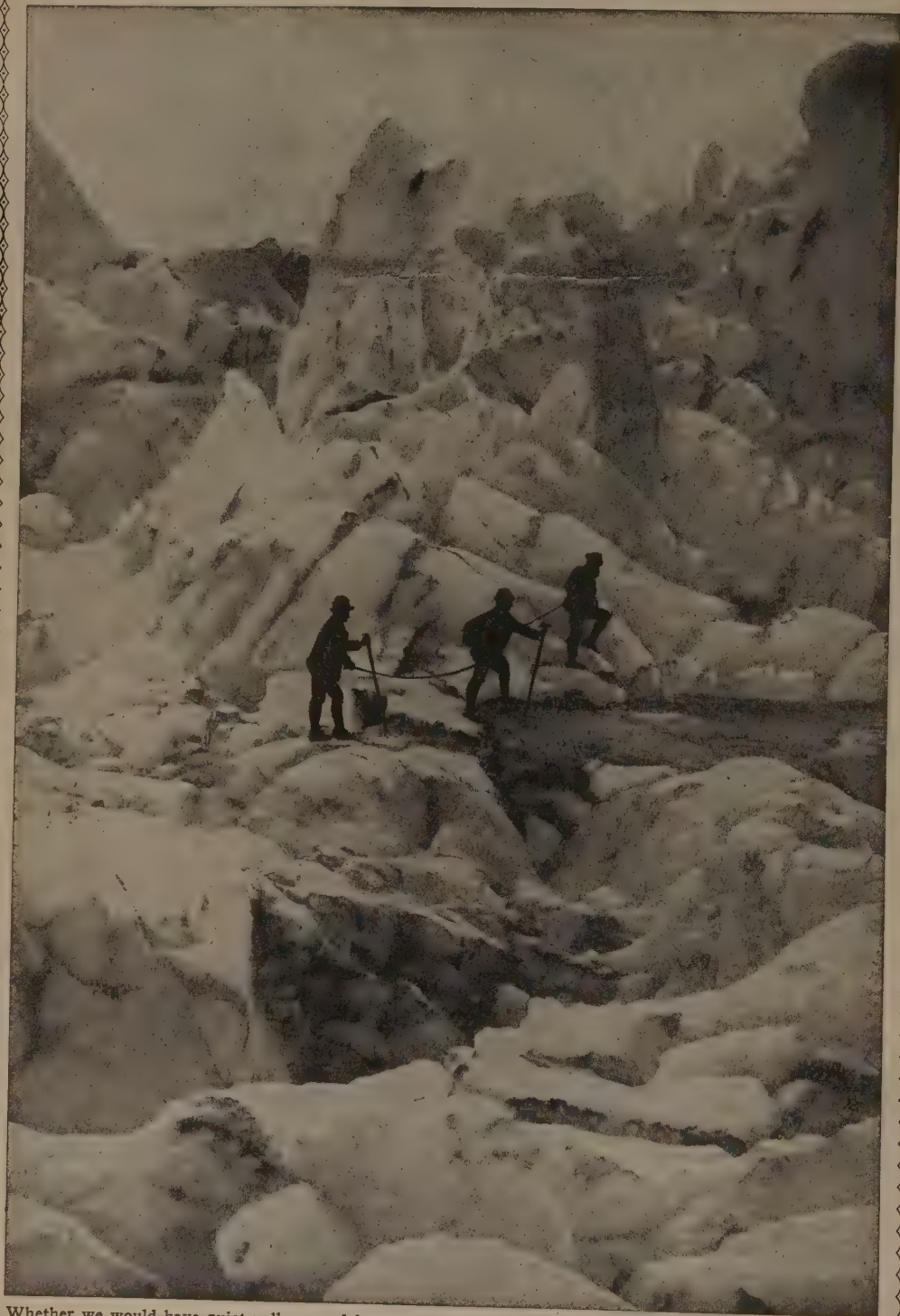
Sometimes, when people are old, or take too little exercise, they lose the proper elasticity of muscles, ribs and lungs, the lungs do not get properly emptied, but remain over-stretched all the time; all sorts of disasters follow.

HOW JILL SOMETIMES FAILS TO COPY JACK'S GOOD EXAMPLE

Breathing is so important that it is one of the things we all do quite naturally without being taught. Only sometimes we adopt foolish habits which interfere with it. Jack is not so bad an offender as Jill in this respect, for she sometimes packs her chest into clothes which prevent her diaphragm from moving and her lungs from filling properly. Nature meant every part of Jack's house to have free play for action, and if she had thought Jack would be better with a strait-jacket she would have made him one. If there is one part of his body more than another which should be perfectly free to move as it will, by day and night, it is the chest, which provides his every living cell with the air it breathes.

CONTINUED ON PAGE 6491.

AT THE TOP OF THE MOUNTAINS OF TYROL



Whether we would have quiet valleys, and happy, hospitable people to dwell among, or thrilling heights to conquer, we may find our desire in Tyrol. This is one of many impressive scenes familiar in this land.



The little town of Gossensass, on the railway through the Brenner Pass

CONTINUED FROM PAGE 6226.

A LITTLE MOUNTAIN LAND

THE PICTURESQUE COUNTRY OF THE DAUNTLESS TYROLESE

PEOPLE love naturally the land they were born in, but a few countries have the power of making men who were not born in them love them. Nearly all the countries which make us love them in this way are small and mountainous. Nobody can love a great continent; but many love some little land, that charms with its beauty, or its grandeur, or its romance.

Men born in small mountain lands often love them so much that if they go to distant countries for a long time they pine away under the thought of their absence, and even die. Longing to go home becomes a disease, which nothing except going home will cure.

One of the little countries that is loved deeply by its own people is Tyrol, and it is so beautiful and romantic that strangers who travel there soon begin to think of it and its people with admiration and affection.

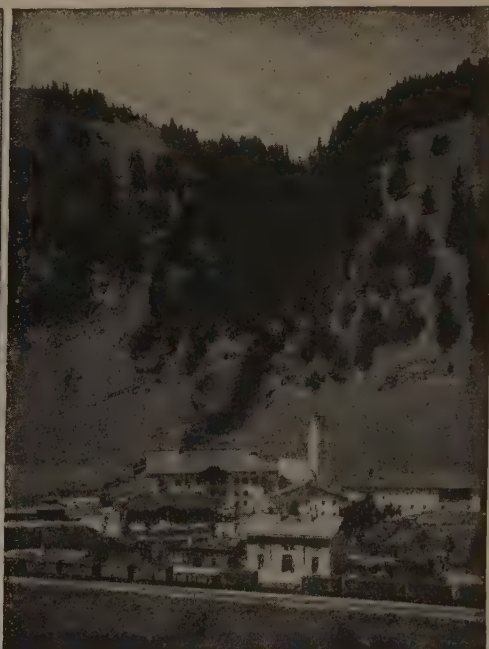
Tyrol is a part of Austria—a country within a country, as Wales and Scotland are countries within Great Britain. It has been a part of Austria for more than 500 years, governing itself in many ways, but

loyal to the ruler of Austria as its king.

This feeling has separated it from the mountain countries that are its neighbours, for they have long looked upon the strong and ambitious Austrians as strangers and tyrants; but the Tyrolese have always taken sides with the Austrians. While the earlier history of the Tyrolese does not always win our admiration, these brave mountaineers played such a noble part at the beginning of the nineteenth century that they raised themselves to places of honour as patriots.

Napoleon had conquered Switzerland and Northern Italy, and, in alliance with the Bavarians, had occupied the land of the Tyrolese, which the Emperor of Austria and his forefathers had ruled for 440 years. Napoleon was now at the height of his power. His name was a terror to half of Europe, and he was master of the other half. Yet at that moment the dauntless Tyrolese rose in rebellion, under the leadership of Andreas Hofer, a peasant innkeeper from a little valley of Western Tyrol. Thrice did these mountain peasants

TYROL AS SEEN FROM THE TRAIN



GLIMPSE OF THE RAILWAY UP THE BRENNER PASS, AND THE STATION AT THE TOP



A REMARKABLE VIADUCT ACROSS A VALLEY A FEW MILES FROM INNSBRUCK

INNSBRUCK—LOOKING UP AND LOOKING DOWN



THE MAIN THOROUGHFARE OF THE BEAUTIFUL CAPITAL OF TYROL



THE TOWN AND ITS RIVER AS SEEN FROM THE HEIGHTS

retake their capital city of Innsbruck, driving out the French and Bavarians, and for a short time Hofer kept his country free in defiance of the might of the great Napoleon. At last the French returned in enormous numbers, captured Andreas Hofer, carried him off to Italy, and on February 20, 1810, shot him like a criminal.

Thirteen years afterwards Hofer's remains were reverently brought back to his own country, and buried in the

holding a chilly burden of eternal ice, and on their broad shoulders a mantle of snow. There is no flat land of any extent, only patches here and there close by the larger rivers. The country is almost the topmost mass of Europe — almost, but not quite, for a few parts of Switzerland are a little higher. It is central, too, and sends its snow-fed waters down to far-distant seas — into the Rhine, and so across Europe to the North Sea; by the Adige, which rushes noisily to the Adriatic Sea; and by the swift-flowing Inn, to the Danube, and eastward to the Black Sea. So this little inland country, by the streams it starts, reaches seas on every side, though far away.

A COUNTRY WALLED IN BY MOUNTAINS

These mountains, walling in this little land, can only be reached by climbing. Either we must climb slowly by railways which thread their way upwards along the sides of stream-cut valleys, or we must follow roads or paths that mount the great hills, till they pass over between the mountain peaks. Whatever way we go, our guide upward is a stream, and we can tell how far we are from the summit of the pass by the lessened size of the stream. When it ceases, we are at the top, and we find that our road takes us to the source of another little stream, which leads us, by its broadening waters, down into the heart of the country.

One of the railways comes up from Bavaria by the comparatively broad valley of the Inn. Another climbs from Vienna, westward, up the course of the River Drave. But most people enter the country either by a line which zig-zags up out of the valley of the Upper Rhine, and then tunnels through the Arlberg Mountain, or else they travel from Italy through a great cleft in the mountains made by the River Adige. This last route was known to the Romans 2,000 years ago as "the German Road," because anyone who wished to go from Italy to Germany passed that way through Tyrol. Along it tramped the Roman legions to conquer Germany; and, later, fierce barbarians came pouring down it to destroy Rome,



THE WIFE OF A TYROLESE HUNTER

great church at Innsbruck. A marble monument keeps his memory green in the hearts of his countrymen. Nor are the nameless heroes forgotten, for on the opposite side of the church another memorial is erected to all the Tyrolese who have died in defence of their country, and is inscribed with the Latin words "Absorpta est mors in victoria," meaning that death is absorbed in victory.

Tyrol is quite filled with high and steep mountains, wild and grand, some

though she had long been the mistress of the world. That great high-road is now called, at its highest part, the Brenner Pass.

When the train enters Tyrol, alongside the River Adige, and also alongside the German Road, it has climbed only about four hundred feet above the level of the sea at Venice, but it goes up and up with the bed of the stream, till it is more than four thousand feet higher, where it reaches the Brenner saddle, which divides Southern from Northern Tyrol. At first the journey is hot, and the narrow valley is green with vines. But when the town of Bozen is reached the country grows sterner, the road rises more rapidly, and the train, leaving the Adige valley, climbs slowly by the narrow rocky gorge of the Eisack, from summer towards winter.

THE TRAIN THAT CLIMBS A MILE HIGH

Soon the mountains on each side above the deep cutting of the river are covered with snow, and their depressions, high up, are filled with glistening green ice which lasts from winter to winter. The air becomes sharp and clear, and long after the warm days have come to us the snow lies deep on the Brenner saddle. When the panting engine has reached this place it has dragged its load a mile high from the level of the sea, though the line still runs in a valley, with forests climbing up the sides into the snow above. In the summer, after the snow has melted from the pass, the villages and little towns that nestle alongside the lofty German Road are filled with visitors, who wander through the sunlit woods, following the upward retreat of winter.

Where the railway reaches the top of the pass a statue stands, with the name Von Etzel on its pedestal. He was the clever engineer who built the line.

After a level run of two or three miles, the railway finds a little downward stream, the Sill, and follows its descent for nearly thirty miles to Innsbruck, the capital of the country. The growing river descends much faster than the railway can, and so for many miles we are high up on the side of its valley.

If we wish to stop by the way after leaving Bozen, Sterzing and Gossensass are beautiful places on the upward journey from Italy, and Steinach, on the way down between the Brenner top and Innsbruck, is as lovely.

How do the people live in this mountain land? Where the valleys widen out into a little grassy plain, or where the rounded shoulder of a mountain becomes a rich pasture under the hot, clear sunshine, a group of wooden



A TYROLESE HUNTER

houses, with broad, overhanging eaves, cluster close together, and form a village around a little church with a spire bright red or green. And here the people live, shut up in their stove-warmed houses a good deal in winter, and widely scattered at work over their meadows, Alps, and woodlands in summer — a sober, industrious, kind, polite, and independent race. Next to the gathering of their hay in the meadows, and pasturing their cattle, sheep, pigs, and goats on the hills as the snows melt,

FAMOUS TOWNS IN THE MOUNTAINS



CORTINA, A BEAUTIFUL TOWN, SURROUNDED BY IMPOSING SUMMITS OF THE ALPS



BOZEN, AN ANCIENT TOWN WHICH IS THE CHIEF COMMERCIAL CENTRE OF TYROL

THE HAPPY PEOPLE OF THE MOUNTAINS



A TYROLESE BOY



A BOY ON HOLIDAY



A PEASANT GIRL



SALZBURG MILKSELLER



A BROTHER AND SISTER



A GIRL OF SALZBURG



TYROLESE MOUNTAINEER



A PEASANT AND HIS WIFE



A MOUNTAINEER'S WIFE

their work is in producing and using wood. Every village has its forest, which it carefully replants as the trees are cut down; and every stream that tumbles into a valley works saw-mills in each village that it passes. Almost everything the people use is home-made. If a man wants a wheelbarrow, he makes it for himself.

Their food is grown around them, and the cloth with which they are dressed is sometimes homespun. In the winter-time whole families in some of the valleys are busy with wood-carving, and many of the wooden dolls and toys sold all over the world are put together by these handy mountain peasants. Then, too, the hunters are busy when they can scale the crags, and the skilful chamois-hunter is a hero among his fellows. The Tyrolese seem to have a natural love for climbing mountains; it is their pride and recreation.

The capital of Tyrol, Innsbruck — that is, the "Inn's Bridge" — has been important since the dawn of history, because it is a centre where all the roads of this part of the world meet, and the chief crossing-place over the swift River Inn. No town in the world is more beautifully placed. Standing clear in the middle of a small plain, surrounded by finely-shaped mountains, every street has a view that charms the eye, and the main thoroughfares have an imposing natural background at each end. Though the mountains tower over the town on every side, they are far enough away to leave abundant air-space.

Everyone who visits Innsbruck goes to the Hofkirche, a church built about 350 years ago by order of the Emperor Maximilian I., and containing his monument, though he is not buried there. The emperor is represented in bronze, kneeling on a marble tomb, whose sides are used for picturing the

story of his life, in delicate marble carvings. On either side of the monument is a row of fourteen large bronze figures of notable men and women who were the emperor's friends, or were claimed by him as his ancestors. One of these statues represents Arthur, the legendary King of England, but the monument, though abounding in details of great beauty, cannot be seen to advantage, and the heroic figures are badly grouped. The simpler memorials, in the same church, to plain Andreas Hofer and his patriot friends mean more.



ANDREAS HOFER'S STATUE

But we have only been looking at Tyrol as it may be seen in passing through it by train, and into its inmost recesses the railway has not yet penetrated. The traveller who is ascending the Brenner road and looks eastwards from Bozen sees strange jagged mountains that shut out the distant sky. There are huge upright peaks, some wedge-shaped, others splintered into spires, here pale grey in colour, there tinged with red and orange, a weird mountain barrier that seems to keep guard over an enchanted land. These are the Dolomite peaks. They take their name from a French geologist, Dolomieu, who first studied the stone of which they are composed. For forty miles from east to west, and thirty miles from north to south, the land is filled with these strange and dangerous mountains which echo daily in summer with terrible thunderstorms; and in the very heart of this wildly romantic land is a lovely flower-decked vale of green pastures ringed round by the great mountains, though the vale itself is four thousand feet above the sea. Cortina is the name of it, and in the wide world there is no sweeter place, though it is so sternly surrounded. One fortunate enough to visit it will never forget.



Eskimo dogs, from the fine copyright painting by Miss Maud Earl of "The End of the Trail"

CONTINUED FROM PAGE 6154.

THE STORY OF YOUR DOG

THE lover of the dog would be lost without the faithful creature which guards his home or keeps him company on his walks. The dog is a very emblem of faithfulness. When it has become fond of a human being, nothing will change its feelings. Starvation and ill-treatment will not kill its devotion. It is almost human in its constancy. No matter how poor a man's home may be, his dog cheerfully stays with him, living on meagre diet of scraps, content with scanty food sweetened by a caress and a kind word now and then. Those who can afford to keep their dogs in luxury can hardly realise the intense devotion which the animal is capable of displaying when it is called upon to bear hardship and privation with its master or mistress.

There is in this friendship between men and dogs something more than appears at first sight. Why should not a dog run away from the house in which food is scarce? It is a flesh-eating animal, belonging to the same family as the wolf and the jackal. It has powerful jaws and terrible teeth. Why should it not, when hungry, do as the wolf or the jackal does? A hungry cannibal never hesitates; how is it that the dog puts to shame a human creature? Ages upon ages of history are an answer to this ques-

tion; ages and ages of time have gone to make the relations between men and dogs what they are to-day.

The friendship had a real beginning. It did not simply happen that men and dogs came into the world and were friends as soon as they met. In the first place there must have been war between men and dogs, just as there was war between men and all other animals. Far, far back in time, man's life was one long battle with the animals. Man depended upon animals for his food. He was no farmer or gardener. He did not plant corn or vegetables. He would learn in course of time that certain fruits and berries and nuts were good for food, and as certain animals which do not rank high in the scale of creation have the sense to store food, we may imagine that man, even in the dim dawn of his powers of mind, would do something of the same sort. It could not, however, be a storing on any large or systematic scale that he did.

His storehouse, and his very home, might at any time be raided and seized by someone more powerful than himself; the cave in which he dwelt might be invaded by savage beasts. No man will lay up store for the future unless he can be reasonably sure that the store will re-

main safe to serve the purpose for which it is intended. All this makes it plain to us that man, in the early days, must have lived what we call a hand-to-mouth existence. As there were months and months in the year when there would be no vegetable food available for him, he would be driven to eat animal food to keep him alive. He was, therefore, a hunter.

WHEN ALL THE DOGS WERE WILD

In those days all dogs were wild, like wolves and jackals. They were among man's enemies. The pet dog of which we are so fond, the dog which is so kind, so intelligent, gentle, and faithful, is descended from a wild beast of the forest. There are scores of different breeds of dogs in the world to-day, of many different kinds and colours and sizes. There is not a country in the world, with the exception of the island of Madagascar, which has not its representative of the dog family. We must be careful about Australia, however. When we say that the various countries have their own dogs, we mean, of course, dogs which are natives of those lands. We do not know certainly that the dingo, the wild dog of Australia, really belongs to that country; we cannot be certain that it was not taken there long ago by the ancestors of the natives whom the first white men in Australia found living there. But, with these two exceptions, go where we will, we find members of the dog family, either dogs as we know them, or in the form of foxes, wolves, or jackals.

THE FIRST PARENTS OF OUR PETS

"Ah, but those are not real dogs," someone says, as she pats her Boston terrier. True, but the wolves and jackals are the ancestors of all dogs, big or little, rough or smooth. Perhaps some of our dogs are descended from the fox, but there is great doubt as to this. We are safe if we point to the wolf and jackal as the first parents of our pets.

In the first place, then, man was against these animals, and they were against him. Doubtless they, in their hunger, often made war upon him, and

he was just as ready to give battle to them. If they meant to attack him, they would soon learn that it was useless for them to do so, one dog at a time. All the members of the dog family, when they are hard pressed by hunger, collect together into packs. They are then better prepared to attack big game. Doubtless many a man fell before the combined onslaughts of packs of these animals. Men are killed every winter in Russia, and in North America, even now, by the cousins of our domestic pets — the wolves.

But gradually the dogs of old times would find that man was different from all other animals. Man was cleverer. He had a different way of walking and running. Having only two legs, he could not speed along with the swiftness of the dog, but in running he had two hands and arms free, and in these he could carry weapons. He could handle a stick or a roughly-made spear. Worse still, he could pick up and throw a stone which could kill. That marked him off from the rest of creation. All other animals had to approach and make a close attack upon their prey; the man could stand and hurl a stone or rock at whatever he wanted to kill.

HOW THE DOGS WOULD DRAW NEARER TO MAN

The dogs would notice that man could slay animals upon which dogs themselves depended for food, and the man would leave large portions of the flesh and bones of his prey upon which dogs could feast. Therefore, dogs would come in time to follow man, as the jackal follows the lion or tiger. The dogs would follow the man to his rough dwelling and pick up the scraps of food which were littered about. That would draw the dogs nearer to man. He and they would gradually get used to one another's company.

But, we may ask, why did not man kill the dogs that came near and eat them as food? No doubt he often did, but he would not eat them if he could help it. When we look around the world to-day, we find that men do not eat animals which live on flesh. We eat only animals that live upon grain and herbage. The flesh of the carnivore

rous animal is coarse and rank, and only when starving do men eat it. It must have been the same in the old days, and that fact would make man less likely to attack dogs which showed any signs of becoming friendly.

The more they saw of each other, the more man and the dogs would realise

manently near his. More probably he would manage to catch a puppy and bring it up near him, and teach it to hunt for him. With its keen scent and hearing, it would lead him where game was to be found. He would kill the game, and the dog would have some of the flesh as its reward.



"DIGNITY AND IMPUDENCE," FROM THE PAINTING BY SIR EDWIN LANDSEER

the advantage of association. The dogs would see in man a strange, masterful creature, with powers which they could not understand. Man would see the skill and fleetness of the dog in hunting, and would realise how valuable such a keen hunter would be. Some few dogs might make their home per-

It did not all happen in a day or a year. What it came to in the end was a sort of bargain between the man and the dog. The dog would hunt for the man, and the man would kill the game, feed the dog, and also provide it with shelter. Gradually times changed. With the growth of civilisation and im-

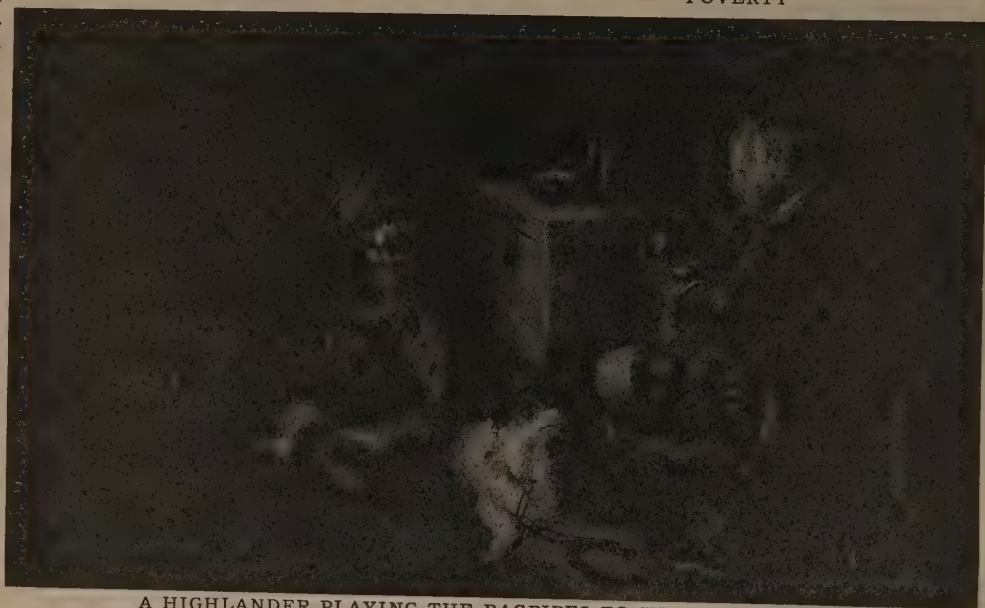
THE DOG AS THE FRIEND OF MAN



RICHES



POVERTY



A HIGHLANDER PLAYING THE BAGPIPES TO HIS DOG FRIENDS



THE LAST BIT OF BREAD



THE SICK MAN'S FRIEND

THE OLD SHEPHERD'S LAST FRIEND



THE DEAD SHEPHERD AND HIS DOGS, FROM THE PAINTING BY HENRY H. EMMERSON



THE OLD SHEPHERD'S CHIEF MOURNER, FROM PAINTING BY SIR EDWIN LANDSEER



FAITHFUL DOG AT HIS MASTER'S GRAVE, FROM PAINTING BY SIR EDWIN LANDSEER

proved means of getting a living, the man became less dependent on the dog, but the love for the animal which he had inherited from his forefathers did not die.

Away from the towns the old partnership exists in pretty much its ancient form. The shepherd who watches his flocks upon the mountains would be helpless without his partner. The sheep-dog is one of the most perfect examples of animal intelligence. It knows its master's sheep as well as the shepherd, perhaps better than he. It will fetch a lamb out of a strange flock, and restore it to its master's fold. It will collect sheep scattered and strayed upon a hill in the mist; it will drive home, un-



BLOODHOUND RUNNING AT FULL SPEED

harméd, the lost lamb, the sheep which has been frightened from its mates.

Other dogs which work for their living are the pointer and the setter, the retriever, the terrier, and the foxhound. The pointer, when he detects the presence of game, "points;" he stands rigid, with his nose pointing at the game, so that his master may shoot. The setter, upon finding game, "sets," or crouches. The terrier will kill the rats that annoy his master. The retriever will bring out of the water, or from anywhere else, game which its master has shot. The fox-hound is the rich man's dog, and exists only to hunt the fox.

But it is the sheep-dog that we single out as the best representative of the working dog to-day. Wherever the

sheep-dog is at work, observers notice that it takes itself very seriously. It loves the shepherd, but it seems to regard its work as of first importance.

Not very long ago an American shepherd died, and was not found for two days. The dogs went on with the flocks; they drove them gently forward up to the high-lying feeding lands to which they were intended to go, stayed with them, then turned them homewards. Of this faithfulness there is a more charming example, with which many are familiar. Hogg, the Scottish poet-shepherd, had a fine sheep-dog.

A DOG AND ITS LITTLE ONES

One day a great snowstorm swept down over the moors where Hogg's sheep were pastured. Hogg called up the dog, and sent it off in one direction, while he himself took an opposite route. Late at night Hogg returned with his half of the flock, but could see no sign of the dog. Long and anxiously he awaited its return. At last there came a gentle scratching at the door, accompanied by a low whine. He opened the door, and saw all his sheep safe, and the dog standing there with a tiny puppy in its mouth. It placed the puppy at its master's feet, then raced off into the snow, soon returning with a second puppy, which, like the other, had been born out in the snow. The faithful creature had gathered the sheep and brought them home, but it had brought home also its puppies, as if to beg from its master the protection it was itself unable to give them.

THE FRIEND OF ALPINE TRAVELLERS

That is the stage to which the partnership between man and his best animal friend has come. But there is other work than sheep-minding for the dog to do. How many lives have the mighty St. Bernards saved up in the Alps? They were trained by the kind-hearted monks to go out on to the snow-covered mountains, and to find travellers who had become exhausted by the cold. The dogs call assistance by their barking. They themselves carry a little barrel slung round their necks containing refreshments. One of these

dogs, a noble creature called Barry, saved the lives of forty persons lost in the snow. He found a little child lying in the snow under the influence of that fatal drowsiness. The dog roused the little sleeper by licking its face, then, lying down, allowed the child to climb upon its back, and so carried the little wayfarer in safety to the monastery.

Dogs such as Barry are big and strong enough to kill the people whom they save, and it must have been a timid person, fearing that Barry had some such intention, who caused the animal's death, for one day this grand old dog

ica, in Siberia, in Kamchatka — he is always the same, a sort of moderately tame wolf. When at liberty he mixes with wolves, if there be wolves about, and in a pack of Eskimo dogs in Arctic America there is almost certain to be as much of the wild wolf as of the true Eskimo dog. In these far northern regions we get a glimpse of the way in which our ancestors and the dogs' ancestors got on together. The Eskimos must have dogs to enable them to move their encampments from place to place. But when the day's work is done the dogs become simply wild animals. They



BELGIAN MILK-SELLERS WITH THEIR PICTURESQUE DOG-CARTS

was killed. A pathetic inscription is set up over his grave: "Barry, the heroic. Saved the lives of forty persons, and was killed by the forty-first."

When primitive men first began to make tools, and with them to model contrivances with which they could carry things, doubtless ice-sledges would be among the conveyances that they would fashion. They would harness dogs to them. This is suggested by the fact that the Eskimos have used dogs as beasts of burden ever since they have been known to travellers.

The Eskimo dog is the animal which shows us most clearly what our own dogs used to be like. It matters not where you find him — in Arctic Amer-

get a few mouthfuls of fish for their wages, take a gulp or two of snow, and that is their supper; they will get nothing more from their master until the morrow, when another piece of fish will be thrown to them. They must hunt for themselves if they need more. And they do hunt, with the result that it is impossible to keep sheep, or goats, or birds where these dogs are. They kill and eat anything.

The Eskimo dogs can be as faithful as other dogs where man is concerned, but they fight among themselves with terrible ferocity. Dr. Nansen, when he was exploring in the Arctic regions, lost several of his dogs from this cause. When they were liberated at night they

MANY MEMBERS OF ONE GREAT FAMILY



These pictures of prize dogs give some idea of the astonishing variety in the dog family

MAN'S BEST FRIEND AMID ETERNAL SNOWS



St. Bernard dogs rescuing exhausted travellers after a snowstorm in the Alps



Eskimo dogs dragging a sledge over hillocks of ice



Dogs of the Monastery of St. Bernard, famous for their heroism in rescuing travellers

would start a quarrel, and every one of the pack would turn upon the dog which seemed to be getting the worst of the battle, and kill it. The time came when, on a sledge march over the ice, Dr. Nansen was compelled to kill some of the dogs in order to feed the survivors. It was sad work, and the dogs turned in disgust from the flesh of their dead companions. Sometimes they held out so long that they had to be served from the supplies of other food saved for Nansen and the one companion who was with him.

DR. NANSEN AND HIS BRAVE DOGS

But when food became so scarce the dogs were compelled to eat their dead comrades. It was a sad and grievous time for the two men of the little party. One by one the dogs were slain until only two remained. There was no food left for them, and the explorers, having now reached open water, had to convert their sledges into rafts. The poor dogs could no longer be of service, and there was nothing on which to feed them if they were taken as passengers. They would have starved had they been left where they were. It was merciful, then, to put an end to their lives.

But the two men felt like murderers when they thought of what they had to do. The dogs were the best of all the team. One was the dog which, after a fight, had always mounted guard over the slain dog. In the morning, after one of these deadly battles, in which a dog had fallen a victim to the fury of its fellows, this one dog would be found acting as sentry over the remains.

THE SADDEST MOMENT OF A MAN'S LIFE

The time had come when this poor creature had, like the rest, to die. Nansen called one of the two dogs his, and the other his comrade Johansen's, and when it came to killing them, neither could slay his own. So, while Nansen shot Johansen's dog, Johansen shot his master's, and there were not two sadder men in the world than Nansen and Johansen at that hour, standing nearer the North Pole than

any other men had ever stood up to that time. They had set out from their ship with twenty-eight dogs to draw their sledges; they were now going back to the ship, after their long and terrible journey, without a dog remaining. They were leaving behind them, dead amid the eternal snows, the friends without whose help they could never have got there at all.

Nansen's were not the only dogs to give their lives for their masters in that terrible frozen North. If a dog could speak it would tell us, that it would gladly die for the human being it loves. The old, old partnership has made the dog a hero, and many a dog has risked or sacrificed its life for its owner. Many stories, of which the truth is not to be doubted, have been told of dogs dying on their owners' graves.

THE LOVE STRONGER THAN DEATH

Not long ago a little girl who was in ill-health was taken from Scotland on a sea voyage. At her special request her pet collie was taken with her. The poor child was too ill to recover, and died at sea. The frail little body was placed in a tiny coffin, and sadly lowered into the sea. Among the watchers was the little one's favourite dog. He seemed to understand the meaning of the sad ceremony, and, as the coffin was dropped into the water, the poor dog disappeared over the side of the ship, following his little mistress into the depths.

The poet Wordsworth has given immortality to three dogs which claimed his affections. One of them was heard by a shepherd to whimper and faintly bark, away in the hills. The shepherd went to the dog, which led him to the remains of his master. Three months before, the man and his dog had passed that way. The man had slipped and fallen and died, and all this time the dog had stayed by to guard his body.

That was more than a century ago, but the dog is still the same loyal, loving creature that he became ages ago, when his fierce and shaggy ancestors made an unspoken bargain with the early men.

CONTINUED ON PAGE 6295.

WHAT THIS STORY TELLS US

IT has been the glory of the United States that the poorest may rise to the highest positions. Below you read how a poor Scotch lad has become one of the richest men in the world. This is not all. He is using the enormous fortune to enable other young men to rise. Mr. Carnegie believes in helping young men to help themselves. Therefore the larger part of his gifts have been devoted to educational purposes.

A SCOTCH LAD WHO BECAME A MILLIONAIRE

CONTINUED FROM PAGE 6160.

YOU have all heard of Andrew Carnegie. In another part of this book you have read of the Hero Fund Commission which he established; perhaps you heard your mother and father speak of the large fund which he gave toward the establishment of universal peace, or perhaps you live in a city or town where one of his libraries has been built. Yet this man, many times a millionaire, who is now devoting his life to wisely giving away his millions of dollars, was once a little blue-eyed Scotch laddie who slaved from morning until night as a bobbin-boy in a cotton factory in Pittsburgh.

Andrew was born in a little house, in Dunfermline, Scotland, some seventy odd years ago. There were four in his family, father and mother and Andrew and his little brother, John. Mr. Carnegie was a master-weaver who owned several looms and employed several apprentices. When Andrew was a little lad of eleven his father's work ran short, and the family found themselves face to face with starvation. After a consultation it was decided that they should sell their things and move to America "to give the boys a chance."

Once in America Andrew and his father took positions in a cotton factory. The hours were long and the work was tedious, but Andrew kept a smiling face, and if he were often very tired indeed for a little boy, he did not mention it to the brave little mother at home, who after her household work was done would bind shoes to make extra money for the little family. Andrew was very proud of being able to help in the family support, and it was one of the happiest moments in his life when he took his first week's wages of \$1.20 home to his mother.

But the lad was not destined to remain a bobbin-boy for long. A gentleman who had come from his home town heard that the little blue-eyed bobbin-boy had come from Dunfermline, and at once offered him work at an increased salary in his own factory. At first Andrew tended the furnace, but the work was such a dangerous and responsible one that it began to have an effect upon the boy's nerves. He could scarcely sleep at night for fear something would happen to the furnace, and he often woke up from horrible dreams in which the whole factory had been blown up.

It was a great relief to Andrew when his employer took him into his office to act as his private clerk, and a still greater relief when he was able to leave the factory altogether and take a position as a messenger boy in the telegraph office at Pittsburgh. He had never been in such comfortable surroundings before, and he was very happy in his new work. His only fear was that he would be discharged because he was not well acquainted with the city, so when he went home at night he studied the different streets until he could repeat the names of the firms in each one backward and forward with his eyes closed. Then his mind was at rest. He next obtained permission to practise on the telegraph instrument out of office hours, and he soon became expert at receiving and sending messages by wire. One day his chance came to him. The wire repeated a death message. None of the operators was around, so Andrew took it down, with the result that he brought himself to the attention of the superintendent, and he was presently promoted to the position of telegraph operator. He then became a train-despatcher for

the Pennsylvania Railroad. The young man was so happy in his new job, so brisk and capable that Thomas A. Scott, superintendent of the road, noticed him and asked his name.

"Andy Carnegie, a Scotsman from Scotland," was the reply.

Now Mr. Scott was of Scotch blood himself and he immediately felt an interest in the bright young telegraph operator, who flashed messages with such lightning rapidity over the wire. He offered the young man the position of private secretary in his own office.

superintendent of the Western or Pittsburgh Division.

What an advance for the little bobbin-boy of the cotton factory.

At the beginning of the Civil War, Colonel Scott was made Assistant Secretary of War, and appointed young Carnegie to the charge of the military railroads and telegraphs in the East. Here he did wonderful work, but applied himself so closely that his health broke down and he was forced to retire.

Meanwhile while working for the railroad, the opportunity had come to



Mr. Carnegie at his desk in his New York home

From this time on Andrew Carnegie progressed steadily upward. He never let an opportunity slip by that would prove his quick-wittedness and shrewdness. His employer's respect for him grew day by day.

"I know what you're after, young man. You want my position," Mr. Scott remarked one day, delightedly.

"And I'll get it yet," quoth Andrew, his blue eyes twinkling.

And he did. Some years later, when Thomas Scott became vice-president of the Pennsylvania Railroad, Andrew Carnegie stepped into the place of

him to invest in a few shares of stock of the Adams Express Company. Later he had become interested in the introduction of the sleeping-car. Now with greatly increased funds at his command, he became interested in the making of iron bridges to take the place of the wooden ones then in general use. His shrewd mind quickly grasped the opportunity that lay in this new field, and soon the company erected the Union Iron Mills to furnish the iron for the bridges.

A trip to England aroused him to still another opportunity in the substi-

TWO HOMES OF ANDREW CARNEGIE



Andrew Carnegie was born in this little cottage in Dunfermline in the county of Fifeshire, Scotland. What a contrast is his birthplace to the magnificent castle below, where the millionaire now spends his summer holidays. Mr. Carnegie, a munificent giver at all times, has made many liberal gifts to his old and dearly-loved home town.



Skibo, the summer home of Mr. Carnegie, is in County Sutherland in the extreme north of Scotland. Into these highland wilds Mr. Carnegie retires every summer with his family and friends, and there enjoys his isolation. Scotland, however, has honoured him as the Lord Rector of the ancient University of St. Andrews.

tution of steel for iron rails. New iron and steel mills were built only to be enlarged.

He had resigned his position with the Pennsylvania Railroad to take his place in the business world as a manufacturer and financier. A master-mind had come to its own at last. Andrew Carnegie was never again to hold a subordinate place. Besides his general shrewdness, his keen-mindedness at seeing opportunities where others would pass them by, Andrew Carnegie had a wonderful executive ability and a certain directness and winsomeness of character that won him loyal friends wherever he went. In his greatly enlarged sphere his magnificent powers of organisation and management came into play. Only a few years passed and the keen-eyed man, who had once been a bobbin-boy in a cotton factory, was soon directing the movements of mines, railroads and three huge steel manufacturing plants. Not content with this he increased and enlarged his business until he practically held the steel market of America within the hollow of his hand. Andrew Carnegie was a multi-millionaire.

One of his greatest gifts was the power to see ability in others. Young men who showed themselves able and willing were advanced to positions of responsibility and in many cases were given a share in the business. Here they worked hard, making money for themselves, it is true, but also for Mr. Carnegie.

When he was past forty Mr. Carnegie had married, and when at last the opportunity came to him to retire from the business world with a magnificent fortune at his disposal, he decided to accept it. He realised the disadvantages that present themselves to the average man retiring from the arena in the prime of his life, but he had "never approved of a man already rich, slaving for 'mickle muir monie' till the end of his days."

Mr. Carnegie's mind was not a "howling wilderness." In his younger days when he had been struggling upward, he had devoured all the books upon which he could lay his hand, and

as soon as he had had more money and time at his disposal he had employed tutors to supplement the self-education of his youth.

While still in business he had begun to write, and now has more than half a dozen books to his credit. The success of some of these has seemed to give him more pleasure than his greatest success in business. The best known of these is "Triumphant Democracy," a study of America.

Before his retirement, Mr. Carnegie had become known as a liberal giver, and his later gifts have been princely. So many and so large are they that they stagger the imagination. Perhaps he is best known as a builder of libraries. He had known in his boyhood the unsatisfied hunger for books, and he determined that, so far as he was able, he would prevent other boys from suffering the same want. No one knows how many libraries he has built in this country and in Europe. Any town which will provide a site and vote a proper sum for the support of a library can secure from him money for a suitable building. There are hundreds of them now open.

He has given a fund of \$10,000,000 to pay the fees of poor students in Scottish universities; he has provided a fund of \$15,000,000, the interest of which is used to pay pensions to old or disabled college professors, or to their widows; he has founded the Carnegie Hero Fund Commission; he has given liberally to several colleges and universities, and hospitals.

At Washington he has founded the Carnegie Institution for scientific research; at Pittsburgh he has founded the Carnegie Institute, which is one of the best equipped technical schools in the world; he has built at The Hague the Peace Palace as a home for the International Peace Conference, and has given an enormous sum to be expended in helping to bring about the abolition of war; he established a fund to pension the workers in the steel mills from which he drew so much of his wealth. These are only a few of his gifts, and new objects of his liberality are constantly being found.



The beautiful harbour of St. John's, the capital of Newfoundland

NEWFOUNDLAND, THE ISLAND COLONY WHERE THE CODFISH REIGNS

NEWFOUNDLAND, the first born English colony in America, is an island at the mouth of the Gulf of St. Lawrence, which it protects from the full sweep of the Atlantic Ocean. The island, roughly triangular in shape, with its area of 42,734 square miles, is one-third larger than Ireland. The coasts are everywhere bold and rugged, presenting a high line of broken cliffs, indented with numerous bays studded with countless islands.

THE BEOTHUKS

The earliest known inhabitants were the Beothuks, a numerous and powerful race, who may have been related to the North American Indian. When John Cabot discovered the island in 1497, these people were at the height of their prosperity. The doom of the natives was sealed with the coming of the white man. The struggle which was waged in the mainland between white man and Indian was also carried on in Newfoundland. The destruction was so complete that all we have left are a few skulls, a skeleton, some bones, and a collection of implements in a museum at St. John's.

THE PEOPLE OF THE ISLAND

The population of the island is 239,027, of which one-third is engaged in fishing. The majority of the people live along the southeastern coast. There are few settlers in the interior and the French claims check settlement on the west shores. The inhabitants are chiefly native born descendants of Irish, English and Scotch ancestors.

COD FISHING, THE CHIEF INDUSTRY

The chief occupation of the people is cod fishing. In many villages dried cod serve as money, with which people buy

food, clothing and fishing tackle. There are three distinct branches of the industry, the Banks, the Shore and the Labrador fisheries. The Banks lie southward of the island, about thirty miles distant from the nearest land, and cover a great area. To these fishing grounds, which are huge submarine islands, which rise nearly to the surface of the water, the fishermen of France, Canada, the United States and the island go during the fishing season. The grounds are on the "high seas" and therefore subject to the jurisdiction of no country or nation. Schooners carrying from twelve to twenty men sail from the mainland and anchor. The crews go out from the schooner in pairs in flat-bottomed boats called dories. They fish with trawls, which are long lines supported at each end, and from which many short lines with baited hooks hang. Oftentimes a passenger on an ocean steamer is surprised as the fog lifts to see scores of small dories, anchored apparently in mid-ocean. Fogs and storms annually cause the death of many of these brave and hardy fishermen.

OTHER METHODS OF FISHING

Shore fishing is carried on from punts or skiffs. Those fishing from punts use ordinary hooks and lines. The fishermen with skiffs use traps. A trap is an enclosure of netting sunk in the sea and so arranged that the schools of cod in swimming by will blunder into it and become ensnared. The coast fishing is not so good as it was a few years ago. Thousands of fishermen, taking with them their wives and children, leave their homes every June and sail to the fishing grounds off the coast of Labrador. Some live in

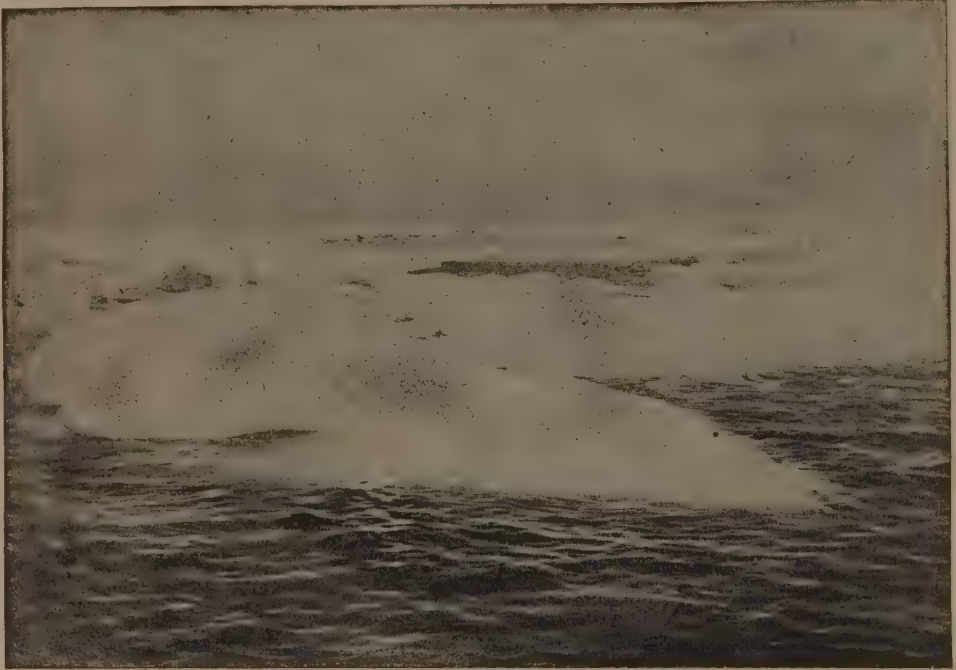
Copyright, 1912, by M. Perry Mills

turf huts or timber shacks along the coast, while others live on the schooners. The women and children assist in curing the fish. They fish until October, when they return home with their catch.

THE FISHERMAN AT HOME

A number of little, square, white-washed, one story cottages nestling in the cliffs overlooking a bay or a cove is a typical fishing village. A score or more goats scamper among the neighbouring rocks, as each household has

turn loans sufficient to carry the poor fisherman through until the following October. This process continues from year to year. The boys are reared on the water and at six can manage a sail. After the fishing season closes in October, the men do little besides mend their nets and fishing tackle. They love to tell stories and eagerly wait for the season to open in March. The Newfoundland fisherman, inhabiting more than a hundred such villages, is a hardy, burly, uncouth, warm-hearted, hospi-



DRIFTING ICE BOMBARDS THE COAST

During a considerable part of the year Newfoundland is surrounded by floating islands of ice, often called "ice-pans." These ice floes often take the appearance of strange beasts, as you may see in the picture. The wind and the tide drive them against the shores and the noise is sometimes terrific.

one or more of these animals. Out into the water of the little harbour are built the stages at which the men land their fish. The cod are scaled by the men as they are caught, but the "splitting," "heading" and "salting" is generally done on shore by the women and children. After salting, the fish are taken to the "flakes"—rude scaffolds covered with under-brush—and there spread out to dry.

The hardy, sturdy fisherman lives, as a rule, from hand to mouth. The season's catch is usually mortgaged to the village merchant, or "planter," who in

table fellow, a blend of English, Irish and Scotch blood.

WHY COD ARE SO PLentiful

The reason why the world's greatest cod fishing ground is centred at this island is interesting. The Arctic current which flows past Newfoundland carries with it hundreds of thousands of tons of minute living matter upon which the small shellfish and other creatures of the sea feed. In turn, these become the food of vast schools of cod. It is strange but true that the Arctic seas and rivers, in spite of the

WHERE THE SEA GIVES A LIVELIHOOD



Near St. John's is the quaint little village of Quidi Vidi, where one can see every process in curing and packing fish. Notice the platform upon which the fish are spread to dry, and the towering hills around the little harbour. Every village has its fish platforms, called "flakes."



Newfoundland may be said to live from the sea. The fisheries here are very important, and the chief subject of conversation is the size of the catch. These fish will soon be split open and spread to dry on the platform you see above. Later they will be packed and sold.

Pictures by Brown Bros.

great cold with which they are surrounded, contribute most abundantly to this supply of living slime. Unless this flood from the Pole is stopped, the fishermen cannot lessen very much the supply of cod. Uncountable millions of cod will continue to come from the darker recesses of their unknown deep-sea homes and throng the Banks and shallower waters where conditions are suitable for breeding and where an abundant supply of food is found.

COD-LIVER OIL AND OTHER THINGS

All parts of the fish are used. Cod-liver oil is extracted from the livers. Glue is made from the skins while the heads and entrails are used for the manufacture of fertilisers. Great swarms of herring arrive along the coast during the early part of September. Great quantities are used as bait for cod, and packing of herrings for food is fast becoming an important industry. Several lobster canneries are doing a thriving business along the southern coast. The sealing industry is not so important and profitable as it was a few years ago, yet every spring several vessels leave St. John's for the sealing grounds of the North.

The Newfoundland dog, of which you have all heard, has almost died out on the island. It is supposed to have developed from a cross between the sledge dogs, which are closely related to the wolf, and other dogs brought from Europe.

MINERALS AND FORESTS

Newfoundland is a treasure house of minerals. There is scarcely a man who cannot show you on his mantel-shelf a specimen of the copper, iron, nickel and even gold ore of his neighbourhood. Several thousand tons of copper and iron are produced yearly, but the industry is only in its infancy. Various mines of coal, asbestos, nickel, lead, and gold in different parts of the island are in various stages of development, and give promise of becoming properties of great value. Along the coasts and in the interior are large tracts of heavily-timbered land. Lumbering operations are extending rapidly. Recently several

large pulp mills were erected and it will be only a short time before the island will export great quantities of pulp.

FARMING AND MANUFACTURING

Farming has not been followed to any extent. Out of a large area of over five million acres of tillable land only one hundred thousand are under cultivation. The people do not care to work in factories and are not adapted to such employment.

THE TOWNS

St. John's (32,292), the capital of the island, is on the southeast coast and is situated on one of the finest natural harbours in America. The city is entirely devoted to the fishing business. Harbour Grace (8,000), Carbonear (4,500), and Bonavista are the only other towns of importance.

THE GOVERNMENT

The island has not yet consented to join the Dominion of Canada, and the British Government still appoints the Governor. There are two chambers, the legislative council of fifteen members, appointed for life by the government of the day, and the legislative assembly, consisting of thirty-six members, elected for four years by ballot under manhood suffrage. The executive government is a ministry responsible to the legislature and holding office so long as they command a majority in the assembly.

The government of Newfoundland also controls the coast of Labrador, that strange, desolate, thinly-populated country which deserves a whole article itself. Perhaps you have heard of the work of the medical missionary, Doctor Wilfred Grenfell, who is devoting his life to the improvement of the lot of the fishermen there.

The possession of so many useful minerals, such vast tracts of forests, such large areas of fertile plains makes Newfoundland a country most favourably equipped for mining, lumbering, agriculture and manufacturing. With capital, enterprise and labour the island is destined to become a great producing and exporting country.

THE SPIRIT OF CANADA

CANADA of to-day is a far different country from Canada of yesterday, and the Canada of to-morrow is destined to become a great and mighty nation. For a century and a half the history of Canada was one of internal conflict between rival races and foreign flags. It was not until the nineteenth century that we find the beginning of constitutional history. It is difficult for the Canadian of to-day to comprehend the situation in those older days. Newspapers were so few as to be of little influence. Books were scarce, high-priced, and of a character not intended to throw light upon existing problems. The people of lower Canada were wrapped up in the traditions and the surroundings of many years before, and under the British flag were dreaming of the ideals of Old France in the days of Louis XIV, and of New France in the time of Frontenac. The people of the English provinces were little more than isolated pioneer settlers steeped in the shadowed memories of a past struggle for King, institutions and country. They were embittered against all democratic tendencies and prejudiced against the Radicals of England, who had assisted in ruining the royal cause in America, as well as against the French of Quebec, who had been so long the traditional enemies of England and the sincere foes of British supremacy in North America.

From this mass of different interests and opposing feelings came the Parliamentary system. It was not asked for but was given from without. The French Canadians accepted it as a part of the new situation, while the English did not really want to govern themselves, but would have been satisfied for many years to come with able governors and efficient local advisers. Still the latter knew how to use it when received, and were more or less familiar with the principles of free government. The increasing population had different political ideas and soon a struggle arose between the English settlers and a large number of the people who cared more

for the present than the past, and more for liberty than memories of royalty. From this struggle came the Rebellion of 1837 and later the conflicts ending in confederation.

Democracy, as time progressed, got a firmer hold upon the people, until to-day the people rule supreme. The rule of the people by the people and for the people is recognised as the only possible principle of government for Canada.

The political leaders have greatly changed in character as the country has slowly broadened from a colony into provinces, from provinces into the Dominion, and from the Dominion into a British nation. For years the English leaders strove to imitate English manners and customs, while the French continued to dream of the past. Canada, as a national idea, did not exist, but as years advanced, the result of feelings, thought and action began to present itself. Under the fostering care of Sir John A. McDonald and Sir Wilfrid Laurier this had grown into a strong Canadian sentiment which had destroyed the old tendencies known as French or English.

The French Canadians no longer feel that their future is wrapped up in Quebec and the past, but they realise that they as Canadians are interested in everything that promotes the interest of Canada. The process of welding all classes into a closer union is being carried on by Premier Borden.

During the past few years, there has developed throughout the British Empire a strong imperialistic feeling. This is directed towards binding together with closer ties the motherland and her colonies. If Canada is to continue as a part of the British Empire, it will not be as a colony but as an independent nation. To the world Canada is still a dependent colony possessing a destiny to be worked out. To the Canadians, she is an independent nation, but instead of putting on the cloak of independence she prefers to develop her resources and to work out her destiny with England as her closest and

dearest ally. In internal as well as foreign matters Canada is practically independent. The willingness of England to grant this independence has bound the country closer to the motherland.

The realisation by England that her possessions are no longer colonies but independent nations, and her treatment of them as such, is binding the Empire closer together. Canadians generally do not entertain the slightest thought of breaking from the Motherland. Suggestions of independence pass unnoticed as the people have no interest in them. Canada is content to remain with the Empire, and it is her ambition and desire to work out her destiny in close connection with the Motherland.

The sentiment which has developed in Canada is strongly Canadian in character. The imperialistic feelings are steadily growing in strength. The Canadian sentiment is peculiar in combining American democratic tendencies and sympathies with a fervid loyalty to the British Crown. The continuance of such close ties is very important to Great Britain, from the fact that the Canadians hold the important point in territory and power in the British Empire, and that upon the continued loyalty depends not only the unity of the imperial system but British control of the waterways of the Atlantic and the Pacific.

Canada lies in the great pathway of commerce; her transcontinental lines furnish the shortest routes around the world. Only a small part of the millions of acres of rich agricultural lands are under cultivation. Either wheat or traffic would make Canada a very prosperous nation. The inland water courses are being improved and then development will have a great influence upon transportation. Future generations may witness the unique spectacle of vessels from European ports loading from the elevators at Winnipeg or cruising for hundreds of miles up the Saskatchewan for cargoes of grain. This is an alluring prospect and one that Canadian pluck and enterprise may bring. The waters of Canada apart

from the soil are the greatest and most valuable undeveloped resource. More valuable than minerals, because properly conserved, they will never be exhausted, but on the contrary, they can be increased. Water power will be the most important factor in Canadian progress and industrial development. Canada possesses all the metals and minerals that mankind uses, but the wealth of her mines has scarcely been touched. Her fisheries, ranking with those of any other country, are yet in their infancy.

Her thousands of square miles of forests under proper care and management will ensure unlimited wealth for the future. All these conditions assure for Canada the foremost rank as a producer of raw materials and as a manufacturer of finished articles.

Canada has learned a valuable lesson from the great producing nations of the world. Everywhere else the policy of protection of natural resources was not developed until these resources had been largely exhausted.

In Canada the people have in time realised the importance of protection of the great natural wealth of the country, and much has been done by legislation to protect and help the development of the natural resources. The people know the importance of legislation dealing with the protection and the promotion of material wealth and the comparative unimportance of mere party conflicts.

The four hundred years of Canadian history which has gone into the making of the Dominion are of a nature to stamp its future with every fair prospect of success. The position of the country, the extent, the resources, the unity and the transportation facilities should make the wealth and the commerce of the future as certain as the aspirations of the people are strong. The loyalty of the people to Canada and to the Empire ought to make its place in the imperial system more defined in the future than has ever yet been possible. Canada for the Canadians within the Empire and against the world seems to be the popular sentiment.



A new life-saving dress in which submarine sailors can float to the surface

CONTINUED FROM PAGE 6244.

DOWN IN THE DEEP, DEEP SEA

In the caverns deep of the ocean cold,
The diver is seeking a treasure of gold.

How can he seek this treasure? It is because he wears a sort of armour, which keeps out the water and brings him air from above.

The diver's suit of rubber and canvas covers his body from feet to neck, but leaves his hands free, his sleeves ending in water-tight cuffs at the wrist. He puts on a heavy helmet with windows, which fastens to the neck of his suit. This helmet has a valve attached to a pipe, through which comes the air pumped from above. A second valve in the helmet lets out the air which has been breathed. In order that the diver may sink down into the water, his suit is "padded" back and front with plates of lead, while his feet are weighted with metal, so that altogether his clothes weigh about 150 pounds.

The deepest that a man has ever been known to dive is 204 feet, but men seldom go down more than 100 feet. The deeper down we go, the greater is the pressure of the air. A man who goes down a hundred feet has to breathe air at four times the pressure of the ordinary atmosphere. The result is that the air taken into

the blood is forced by the pressure into froth and bubbles, and some of the tissues of the body give off this air very slowly, so that if a man comes up suddenly many of these bubbles remain in his blood. This may cause paralysis or death. To guard against this, a man has to take as long a time in coming up out of the water as he has been down.

Divers are carried by every man-of-war. If anything goes wrong with the ship below the water-line, the men put on their dress, go down with tools, and repair the damage. One kind of diving suit has attached a cylinder of compressed air.

Another invention, for submarine vessels, is a strong helmet and a water-tight jacket. In the jacket pocket is a substance which, on coming in contact with the sailor's warm breath, gives off oxygen, and so acts that the poisonous carbonic acid from the man's breath is absorbed. By this means, the air inside the helmet and jacket can be breathed again and again. The submarine sailor, in case of accident, puts on this dress and floats to the surface, when the dress acts as a life-buoy, keeping its wearer afloat until he can be rescued.

THE DIVER PREPARES TO GO DOWN



The diver's dress is the result of centuries of experiment, and enables a man to keep under water for five or six hours at a time. The dress consists of a waterproof garment, heavily weighted, massive, heavy boots with leaden soles, and a metal helmet. Here the divers are beginning to put on their costume.



After the diver has put on ordinary clothing, he is helped into the waterproof garment, which covers his whole body, except head and hands. He needs warm clothing, as it is cold working under water.



In this picture the diver has on the waterproof garment and the heavy boots. The rope by which he will be lowered is in position round his waist, and he is about to have the helmet put on his head.

TALKING TO A MAN DOWN IN THE SEA



These pictures show the diver going down into the sea, and a man talking to him by telephone. The diver's helmet has three glass windows, and is fitted with valves, so the air he has breathed can escape. Fresh air is supplied through a tube that connects the helmet with an air-pump worked from above.

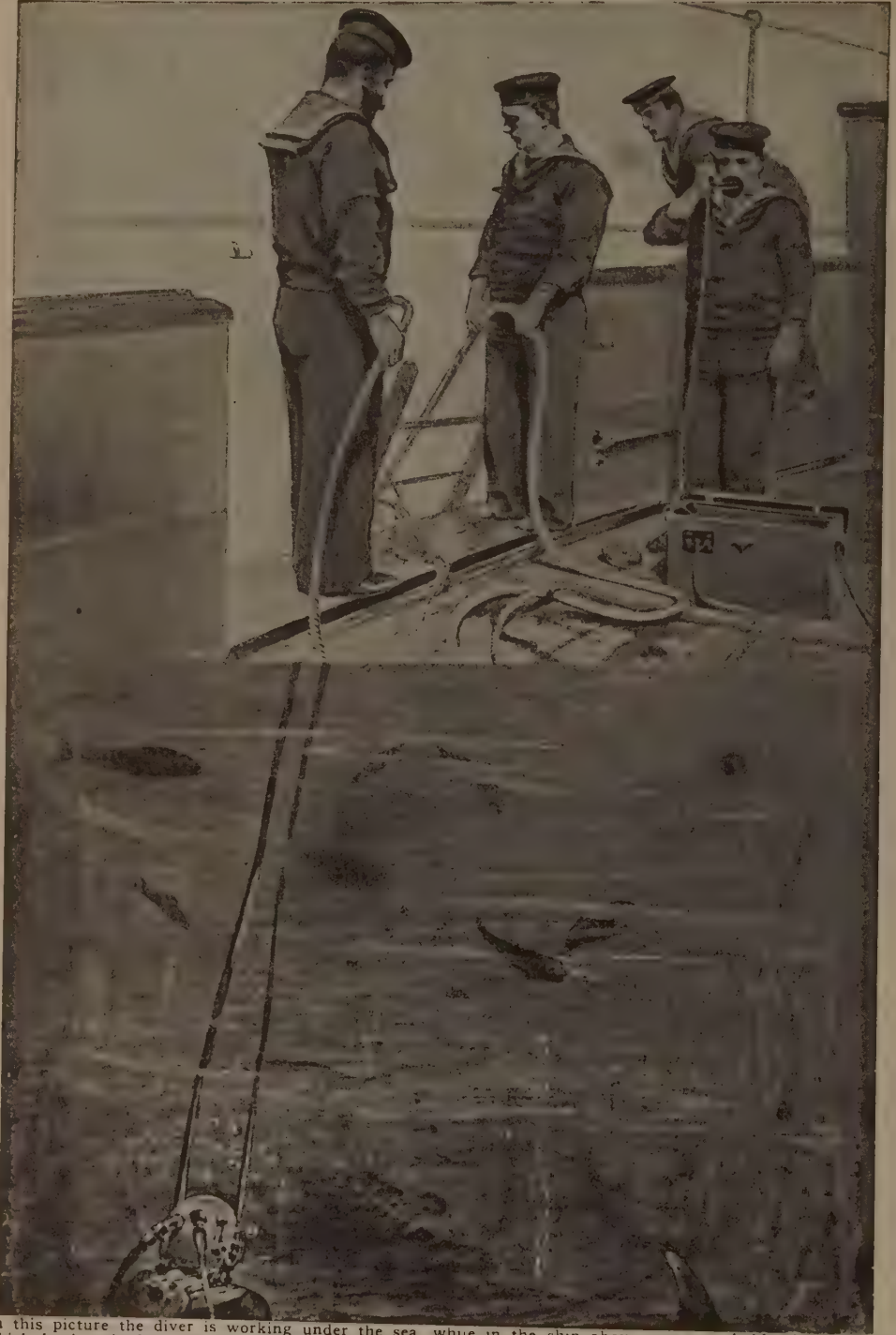


The diver's costume weighs about 150 pounds, but so buoant is the water that he has to put his feet under the ladder rungs to pull himself down.



Communication is kept up by means of the telephone. One bluejacket is here speaking to the diver, while the other is working the air-pump.

THE MEN ABOVE AND THE MAN BELOW



In this picture the diver is working under the sea, while in the ship above one man holds the rope by which he is raised, another has charge of the air-tube, and a third is telephoning to the diver. The greatest depth to which a diver has been known to descend is 204 feet, but divers can rarely work farther down than 100 feet. A complete diving costume, with all the necessary apparatus, costs several hundred dollars, but this is cheap, considering the valuable work the diver does.

The photographs on these pages are by Stephen Cribb, and others

THE DIVER COMES BACK TO THE BOAT



On this page we see how a diver works from a small boat. There is no telephone, and the diver communicates with those above by signalling with a rope. The diver gets to the place where he wishes to work either by descending a ladder that hangs over the side of the boat, or by being let down by a rope.



The diver is pulled to the surface by the rope round his body. The invention of diving apparatus has led to the recovery of a vast amount of treasure. From one ship alone that foundered in sixty feet of water, nearly \$1,000,000 was recovered in a few years. In the latest kind of diving dress the diver carries a cylinder of compressed air on his back, and is independent of help from above.

THE BELL THAT RINGS UNDER THE SEA



This shows the best means of warning a ship in foggy weather. By means of electricity, the lighthouse-keeper rings a bell under the sea. The ship has inside its hull on each side a microphone, which collects the sound of the bell as it passes through the water in the direction of the dotted line, and magnifies it. A wire connects each microphone with a telephone receiver in the wheel-house, and by turning his ship until he hears the bell equally loudly from each microphone, the captain is able to point his ship towards the bell. His chart marks the position of the bell, and he is thus able to know exactly where he is.



Jack's voice-box, with covering partly removed to show changing of position of vocal cords. First picture shows an opening for breathing, the second the cords forming chink for singing high note.

CONTINUED FROM PAGE 6255.

JACK'S WIRELESS TELEPHONE THE BOX IN WHICH HE KEEPS HIS VOICE

WE remember that, as the air went down to ventilate Jack's house, it had to pass through a very narrow place, which was opened to let it go by. That place has no use at all, so far as the ingoing air is concerned, though it is true that Jack can make noises, and even speak, by means of his ingoing air; but that is very tiring to Jack, and still more tiring to the people who have to listen to him. The real business of this narrow place, and the voice-box that holds it, is with the air as it comes back from Jack's bellows. This air, we remember, is rather warmer, and much moister, than it was when it went in; it contains less oxygen, more carbonic acid gas, and just the same amount of nitrogen.

Other creatures can make more noise, and more alarming noise, and can keep up their voices for a longer time; but no other creature has anything to approach the voice-box of Jack's house for the beauty and the variety and the expressiveness and the usefulness of the sounds it can make. Perhaps, however, if the truth were told, the credit of this goes less to Jack's voice-box than to the won-

derful group of head-servants living in the upper part of his brain.

Now, before we describe this voice-box, we must understand what it really is, and what it enables Jack to do. We know already that his house, like some great office or hospital, has a magnificent telephone system of its own, by which all its parts can communicate with each other. We already know very well that it has millions of little batteries called nerve-cells, and that these nerve-cells communicate with each other, and with every part of Jack's house, by means of a wonderful kind of living wires called nerves. These nerves do undoubtedly play exactly the part of wires: messages run through them; they direct the course of the messages and keep them to themselves. If they are cut, the messages cannot travel; and they are definitely of two kinds—one carrying messages only from Jack's brain *outwards*, and one carrying messages only *inwards* to the brain.

But an office or a hospital not only needs its own private telephone system, but also requires some arrangement for communicating with the

outside world. It requires a machine for sending messages, and it requires also another kind of machine, called a receiver, for taking in messages. Now, if an office or a hospital requires such arrangements, much more does Jack's house. Any other kind of house may get along by itself, but Jack's house cannot. It was made and meant to be one of many, all living together, and helping one another, and communicating with, and serving one another.

THE TELEPHONE THAT IS ALWAYS MOVING

It follows that the arrangements for sending and receiving messages are of the first importance in Jack's house; and here a difficulty at once arises. Ordinary houses stand still where they are built, and there is no particular difficulty in setting up machines in them with wires by which the occupants of the houses can speak to each other and be spoken to. But we could hardly have a telephone put into our house if it were constantly walking and running about, and might any day make a journey of a hundred or a thousand miles.

There are, of course, such things as wireless telephones, and people can talk to each other by means of telephones at great distances without wires, just as they can telegraph to each other. What happens is simply that the electric waves, which, in other cases, run along wires, in this case run through the air in an invisible kind of something we call the ether. This we consider exceedingly wonderful, but it is really one of the oldest things, and we all do it every day.

WHAT JACK'S VOICE-BOX REALLY DOES

We all have in our throats a marvelous machine for making waves, which need and have no wire, and with this machine we daily telephone—which means “speak at a distance”—to each other; and we also possess a much more wonderful receiver, called the ear, which catches these waves, and then sends an account of them to our brain by means of certain of the wires that go to make up the *inside* telephone system of Jack's house. Now we have some idea of what Jack's voice-box

really does, and we can proceed to see how it does it.

Of course, it is not always in action—if Jack has any sense. Yet when it is not in action it must always be on its good behaviour, for air is for ever needing to pass through it, whether or not it chooses to make use of the air on its own account.

This wonderful voice-box, or larynx, the message-sender of Jack's wireless telephone, is made up of a number of separate pieces of cartilage, or gristle, a firm, fairly stiff substance which is not bone, and yet is rather like it. When Jack's house grows very old, these pieces of gristle are apt to get too much lime in them, and become more like bone than they should; and this is probably the chief reason why the voices of old people change, and become weak and shaky.

WHEN JACK'S BOX GROWS MUCH BIGGER

When these pieces of cartilage are put together they make a kind of box, which we can readily see and feel in the throat, and which is sometimes called Adam's apple, because of the stupid idea that it is the apple that Adam swallowed, which stuck in his throat. It is true, however, that this “apple” is much bigger and more noticeable in men than in women, and that is why men have stronger and deeper voices than women.

When Jack and Jill are children their voice-boxes are very small, but at some time in their teens their voice-boxes, especially Jack's, grow much bigger. This happens so quickly in Jack's case that, for a time, he loses control of his voice-box, and his voice is likely to break, and sound sometimes high and sometimes low without his meaning to make the difference. Also, if he has been a singer, his pure child-like high notes begin to go, and gradually he gets deeper notes which he never had before.

When the voice-box has grown up, so to say, we can readily feel in our throats the largest of the cartilages, which projects forwards, and beneath it we can feel a regular, strong ring, which is the lowest of the cartilages, and supports the others.

But we can really learn nothing about this voice-box until we look inside it. About half a century ago an inventive Spaniard, a great teacher of singing, called Manuel Garcia — who died lately, more than a hundred years old — thought he would like to be able to see the inside of his own voice-box, and he actually invented a little mirror which can be passed into the back of anyone's throat, and with which can be seen reflected the inside of the person's voice-box. Garcia invented this laryngoscope, or larynx-seer, because he wanted to learn about singing; but, somewhat improved, it has become a valuable invention for doctors, enabling them to save many lives and voices and relieve a vast amount of pain.

THE CORDS THAT HELP JACK AND JILL TO SPEAK

What we see with the laryngoscope is a pair of vocal cords. When these are quite well they are pale white to look at, and they move together, towards or away from each other, quickly and easily and equally; so that the space between them is always exactly in the middle of the larynx, and that means also exactly in the middle of Jack's house. If one cord were moving badly, the other would come across to try to meet it. Also, if Jack has been talking too much, or has been smoking too much — a very common reason — and also in people who drink too much, the cords are not pale white, but slightly reddish, and then the voice is husky, and soon gets tired.

The cords are made of pure elastic fibres, covered by a layer of smooth, flat cells. In front, as the picture shows, they are attached close together behind the front part of the big cartilage which we can see and feel so easily.

But each of the cords is attached behind to a corner of a little separate piece of cartilage, and each of these pieces of cartilage is so posed that it can rotate and twist upon itself. When it twists in one direction, it carries the end of that vocal cord towards the middle of Jack's throat, to meet the other cord. In health, both cords always move together, and so in this case the cords will almost meet — not quite, but very

nearly. Every time Jack speaks or sings, this is the first thing he does; and if he cannot bring his cords close together like this he has lost his voice, and can only whisper.

WHEN JACK SHOUTS AT THE TOP OF HIS VOICE

But when the piece of cartilage that carries the back end of its vocal cord twists on itself in the other direction, it carries the cord away from the middle, and away from its fellow. Both little cartilages do this together, and now what was before a narrow chink becomes a triangular opening that readily lets air through in either direction, without producing any sound.

Our business now is with what happens when Jack puts his vocal cords together as the air is coming out of his chest. In the first place, he does not content himself with letting the air come out by the elastic recoil of his stretched lungs and ribs and muscles, as he usually does. That would not give him enough force for his purpose. On these occasions he makes a "forced expiration," deliberately squeezing his chest, so as to make the air come up his windpipe with unusual force. The harder he squeezes, the more result he will get, and when he shouts or sings as loud as he can he is squeezing his chest to its utmost possible extent, short of blowing his vocal cords apart and spoiling everything.

THE WAVES THAT SPREAD IN ALL DIRECTIONS

But he does more than this. Not only does he bring his vocal cords together, but he also deliberately makes them tight. The cartilages to which their back ends are fixed sit on the top of the ring cartilage, which is shaped at the back exactly like a signet ring, and has a wide space for them to rest on. Now, when Jack thinks fit, he can tilt these little cartilages backwards so as to make his vocal cords tight; and then, if a current of air is pressed hard and suddenly against them, they have no choice but to vibrate, or tremble, like any tight string you might pluck with your finger.

Thus Jack's wireless telephone produces air-waves — commonly called sound — which leave his house, and

may be picked up by any receiver, such as the ear of a man or an animal, or the receiver of a phonograph. These waves, like the waves of other wireless telephony or telegraphy, spread in all directions, and cannot be directed beyond a slight degree, because there is no wire to confine them.

THE TINY THINGS ON WHICH THE BEAUTY OF SPEAKING DEPENDS

The pitch of the sound depends on the number of waves produced in a second, and that depends entirely on the tightness of Jack's cords. It differs in different people, because some have heavier and longer cords, and these will always vibrate more slowly, and make lower-pitched sounds, however tightly they may be pulled. But, in any particular case, the higher notes will be produced when Jack tightens his cords, and the lower notes when he relaxes them. He does so all the time, when he is speaking as well as when he is singing. Listen to anyone speaking, and you will hear how the pitch of his voice rises and falls, differently at different times; so that, for instance, you could tell by the change in pitch that he was asking a question even if he were using a language, such as Spanish, that you did not understand. Half the beauty and interest and expressiveness of speaking and reading aloud depends on these changes of pitch—which depend on the use of a tiny pair of muscles, and a special pair of nerves.

HOW EVERY PART OF THE HOUSE HELPS JACK TO SING

In great singers this power is marvellous. They can control the pitch of the voice within wide limits, at their will; they can maintain the clearness and beauty of the tone equally when they are scarcely sounding any note at all and when they are singing their loudest; and they can alter, also, the quality of the tone in order to express different kinds of feeling.

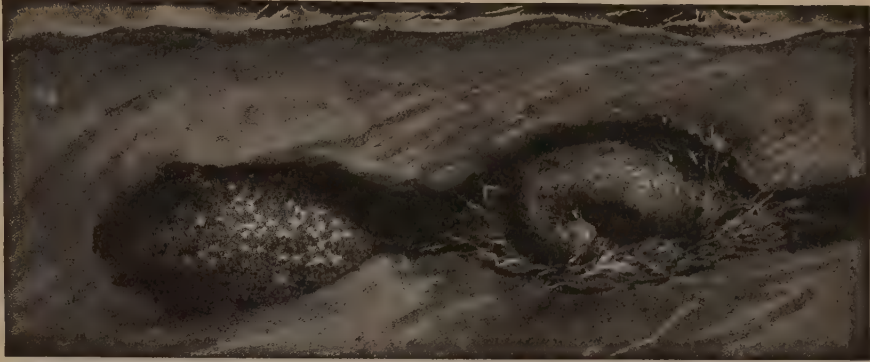
But it is not to be supposed that the voice-box itself, without any help, is equal to all this, much less to producing words. On the contrary, every neighbouring part of Jack's house is called on for aid when he speaks or sings. When he alters the pitch of his voice,

he can feel that his voice-box rises or falls in his throat. When he speaks or sings deep and loud, he can feel his whole chest vibrating and helping to make the sound what it is. His whole throat is at work, too. Indeed, when he first learns to sing he uses his throat too much and strangles his voice, and people say he is a "throaty" singer. His tongue is always at work, either lying low and smooth in the floor of his mouth, or moving about to make the vowels or consonants. His lips are at it, too, as deaf people well know, when they learn to read the lips because they cannot hear. His soft palate, at the back of the roof of his mouth, rises and closes the back of his nose, so that he does not produce a nasal tone; and in good singers, when they sing high and loud, if we put our fingers on their nose or cheek-bones, we can feel them all vibrating and helping the sound, just as the chest does with the lower notes.

THE MACHINERY THAT WORKS TO PRODUCE LANGUAGE AND MUSIC

All this complicated machinery works together with exquisite ease and skill and harmony whenever we speak or sing properly, and it produces either the universal language called music, which can express things, like joy or sorrow, that all can understand; or else it produces a special set of waves—and interruptions to the waves, which are called consonants, like p and m and t—which form a code or set of signals, called a language, just like the code used in ordinary telegraphy. Our native language seems "natural" to us, because we grew up with it; but really it is a quite artificial and specially invented code, and we show this when we criticise any code we don't understand—though it is probably just as good as ours—and call it "gibberish." The only exception to this is that a few words in all codes are not really artificial, but are more or less imitations of the natural sounds—such words as whisper, and buzz, and tinkle, and coo, and so on.

Such, then, is Jack's wireless telephone, although as yet we have only described the least part of it.



A hamster — a rat with cheek-pouches — enjoying its long sleep through the winter

CONTINUED FROM PAGE 6274.

THE WINTER SLEEP OF ANIMALS

A BUTTERFLY was born one day, and saw a world beautiful with sunshine and flowers and fruit. The air was sweet with perfume, the flowers were heavy with nectar, the world was a paradise for butterflies. And our butterfly danced and floated in the sunlight, and retired in the evening to the shelter of a splendid tree. The butterfly laid its eggs, and died. Its whole life lasted but a few days. To such a butterfly our world is always sunny and warm; always full of flowers and fruit. Now, how many of us realise that there are animals which live far longer than man lives — animals which know nothing but summer?

In a famous zoological garden an animal was shown, a few years ago, which had slept about two hundred years in all. The animal in question was an elephant tortoise, the age of which at the time of his death, in 1906, was over 350 years. Now, he would sleep at least twelve hours out of each twenty-four during the summer. But that did not satisfy him. As soon as the dull days of autumn came, the tortoise put himself to sleep, not for the night, but for the whole winter. And during all his long life — a life as long as the lives of six men — he never saw a winter. This tortoise was not

different from the rest of his family. Every year he hibernated — that is to say, he passed the winter hidden away, and in sleep.

The long sleep of animals in the winter is one of the wonderful precautions which Nature provides for her children of the wilds. We might say that it is natural for a cold-blooded animal like the tortoise to go to sleep for the winter; that it is so sluggish an animal at the best that to change to a state of complete torpor or sleep is but a little step. But animals much more active than the tortoise go to sleep for the whole of the winter months.

When we read of travellers in the Arctic regions, we know that in the depth of winter they may come across the great Polar bear. Naturally, then, we say to ourselves that Polar bears do not hibernate. We are both right and wrong. Male Polar bears do not hibernate. They take their nightly sleep as we take ours, but they are always active in pursuit of food during the day. The mother Polar bear, however, goes to sleep for the winter. She lies down in the snow, and lets the soft, feathery mantle cover her. Her warm breath keeps open a sort of funnel for her through which she can breathe. Far down in the snow as

she may lie, there is always open a way to the upper air from which she can draw supplies of oxygen to keep her blood pure. And there, through all the winter days and nights, she lies. Winter comes and goes, and in due course the spring-time arrives. Then forth from her bed of snow comes the mother bear. And when she does go out, she does not go alone—she takes with her a baby bear, or, it may

moment Nature told them that the hour was at hand for them to begin their winter sleep; they would die of cold, like ourselves, if they did not take precautions. They seek the right sort of shelter—some enclosed place, where the cold wind will not blow, and where the temperature will not vary. A mysterious knowledge which they have spurs them to do more than find out this shelter. As the autumn draws near,



A POLAR BEAR SLEEPING THROUGH THE WINTER

be, two baby bears, whiter and fatter and jollier than the finest Teddy bear that ever became lord of a nursery.

But let us not forget that there are many other bears besides those of the Arctic regions, and many of these also hibernate. They do not bury themselves in the snow, but they find some other refuge. It may be the hollow trunk of a tree, or it may be some snug cave. All hibernating animals must, before settling down for the winter, find some suitable place. It would be of no use for them just to lie down the

the bears eat and eat and eat, not because they are desperately hungry, nor because they are greedy. They eat that they may become fat. During the winter months, when they are lying like dead bears in their retreats, they will require some sort of nourishment to retain life in their bodies. That nourishment they find in the masses of fat stored up in their bodies by the process of heavy feeding which they have undergone in preparation for their long fast in the winter months.

He knows that he must be fat at the

beginning of autumn when he tucks himself up in his cave or tree, or he will die, and so well does he understand this that, if times have been hard with him, and he has not put on a great mass of fat, he will not risk going off for his winter sleep. Woe to us if we come across him at such a time. We ourselves are bad-tempered if we lose our sleep, but we are not as bad as the thin and angry bear which wants to sleep. That is the time when he is to be avoided. Another time is when he wakes up from his winter sleep. Then he is a bad-tempered fellow indeed. All the fat in his body has been absorbed during the winter; he is lean and hungry, and his fur is also matted and unlovely, and he is as bad-tempered as any bear could be. But leave him alone, and he will come round. He will find roots, tender shoots of trees, honey, perhaps a few animals, and in a month's time his fur will have become sleek and fine.

The badger belongs to a species which, in colder lands, passes a good deal of the winter in sleep. In this it is like the brown bear. Brown bears and badgers partly hibernate—that is to say, they have long spells of winter sleep, without passing all the winter in this way. These animals now and again bestir themselves to go out and get food. Forth they go, get a meal as best they can, then return to their lair and sleep for weeks. Even the common English hare hibernates to some extent. It can lie and snooze for days, or even weeks together, in the snow in the fields, and feel none the worse for the adventure. The scientist would not call this true hibernation, for the hare, like the Polar bear, keeps open a funnel in the snow by means of its warm breath. The scientist insists that an animal, to hibernate, shall be in a state

of complete torpor; that it shall be to all appearance dead.

An animal in this state is one of the greatest mysteries in the world. The breathing practically ceases, the heart beats faintly; the temperature, or bodily heat, of the animal sinks to the temperature of the place in which it lies. Great cold numbs us, and makes us fall asleep—to die. But great cold awakens the hibernating animal. The sleeper is recalled to life, as it were, by a sudden fall in temperature, and if it is not able to move about and get food, or in other ways increase the heat of its body, it will die, frozen to death, like the weakest of us. A rise in temperature will also recall the unconscious animal from its deep slumbers.

The bats hibernate in the truest sense. If we were to take a bat in the middle of summer and plunge it into water, we could soon drown it. But when a bat has fallen into its winter sleep we can place it in a bucket of water and keep it there for nearly half an hour, and it will



A BADGER IN ITS WINTER SLEEP

know nothing about it, and be none the worse for the drenching. Every boy who has handled a sleeping hedgehog in summer knows that if we disturb it when it is sleeping ordinarily it will give a little snort or two, wriggle, then coil itself up tighter than ever, being quite awake.

When its winter sleep has started, however, we can do as we like to it without awakening it. It seems scarcely to breathe. When we try to rouse it, it will give one or two snores, then breathe feebly a few times, and become as quiet as if dead.

In winter we might handle some deadly snakes without the least risk of danger to ourselves, but others, awakened from their torpor, would be as deadly as in the summer-time. There

is plenty of opportunity for studying hibernation if we keep reptiles, for they all go to sleep for the whole winter, provided that the conditions in which we keep them resemble the conditions under which these animals live when at large. Rattlesnakes are said to travel for miles, in the autumn, back to the old home where they were born, so that all the members of the family, no matter how far they have wandered during the summer in search of food, may be together for the long winter sleep. But who would care to handle rattlesnakes, even though they were asleep? Some of the deadliest vipers when aroused in the winter are quite harmless; their "poison" is not poison at this time, but as other poisonous snakes are poisonous winter and summer, we should not care to experiment with the rattlesnake when he is waking up in a bad temper.

We can get ample evidence as to the ways of hibernating animals from our common neighbours, the frogs and toads. These sleep soundly through the most severe winter, but they are too wise in the choice of their hiding-places for us to find them easily. When chill autumn comes the frogs betake themselves to their ponds, dive down to the bottom, and bury themselves in the mud.



A young bat, life-size, picked up in the Surrey lanes at Ewell, near Epsom

Should we by any chance come upon a hibernating frog, he will swim lazily away, but will soon settle down again to resume the nap which we have disturbed. It is easy for any cold-blooded animal thus to pass the time in sleep. A reptile does not have to undergo so violent a change of temperature as a warm-blooded animal. A lizard makes itself at home for the winter in various places — under stones, among dead leaves, in holes and trees, and so forth. Tortoises bury themselves

for their winter sleep.

Lower in the scale of life we find the same habit practised. Snails and slugs are profound winter sleepers. Slugs go to sleep in holes in the ground, and worms make their winter beds deep enough in the ground to escape the effect of frost. Snails, however, take a double precaution. They have their holes in the ground, but they are skilful enough to make a special protection for themselves. They close up the hole in their shell, but, as they must still have air, they leave open a tiny hole in this covering. It is hard to say how long they can support



BATS DURING THEIR WINTER SLEEP

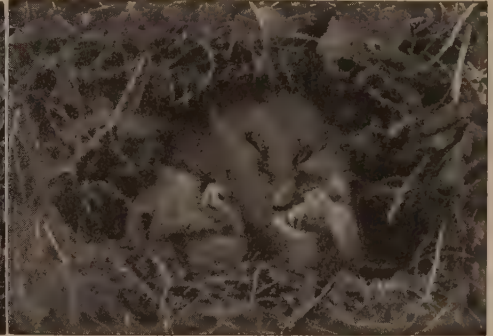
life in these conditions. A snail from Egypt, called *Helix desertorum*, lived, gummed to a board, for four years. It then revived, and lived in a museum for two years after awakening. Hence

we need not be surprised to learn that fresh-water snails have the power of hiding away and remaining without food all the winter months. Some fishes hide themselves in deep holes or in the mud, and remain in a torpor while winter lasts.

Many insects hibernate. But here we come to a parting of the ways, as it were. Are we to call the life of the chrysalis during the winter a hibernation? Some insects lay two or three lots of eggs in the course of the summer. The earlier lots will all be hatched during the same summer, but the later will remain either as eggs or as chrysalises during the time of cold and absence of food. That is true of flies and many moths and butterflies. But we see butterflies on warm days in winter.



A HEDGEHOG IN ITS WINTER SLEEP



A DORMOUSE IN ITS WINTER SLEEP

True, there are some butterflies hardy enough to brave the cold days of winter. During frost and fogs and snow and rain they hide away in warm places, depending for life on the store of nourishment contained in their fragile bodies.

When the sun shines and the wind is warm, out they come, fluttering like winged sunshine in the wintry air. A very little suffices to feed them, and we are all glad, for the sight of a butterfly in winter is cheering.

It has taken the experience of thousands of generations to teach animals that it is necessary for them to go to sleep during the winter. Those animals which hibernate know their business better than we can teach it to them. Certain bats go off to bed for the winter at the end of July, when their food is

still plentiful. That seems unaccountable to us, but that there is a good reason for it we may be sure from the fact that year after year the bats retire at about the same time. Probably the reason is that they have had all the food necessary to build up their bodily strength; to continue to feed might be useless, perhaps even harmful.

Let us glance at the methods of some animals that hibernate on less severe lines. Our pert and handsome friend, the squirrel, is one of them. We already know how he stores up food for the winter, then tucks himself up in bed and goes off to sleep. But warm days of winter wake him up, or the action of his heart and muscles, which consume the fat stored in his body, does so. He wakes up, pops out to his store of

nuts, and makes a good meal, then curls himself up for another long snooze in his delightfully warm little abode.

American marmots actually make hay and store it in summer, so that they may have abundant food during the winter. There are many species of marmots, and we can find something to admire in the wise ways of each. Those whose homes are in Europe and India make but little preparation, for they know that they will be able to leave their underground towns early in spring, and come out for food. Others lay up store for a long stay underground, so that as often as hunger awakens them they may have sufficient food in their little barns without having to go out and face the cruel weather. The chipmunk or ground squirrel knows that winter is a hard time, dur-

ing which he must shut himself up in his subterranean city. How well he provides against that time we may know from what was found in the winter home made by four chipmunks. There was a quarter of a pint of wheat, a quart of nuts, a peck of acorns, two quarts of buckwheat, a lot of corn, and a quantity of grass-seed. And this was to feed four fat chipmunks in the little intervals of wakefulness throughout the winter. Need we wonder at all that when they come out from their long winter sleep the chipmunks are as fat as butter?

It is from necessity, then, not from choice, that the animals of which we have been talking take these long winter sleeps. Long as it has taken them to learn that they must accustom themselves to such a mode of life, they very soon shake off the attractions of a winter-long sleep if their conditions of life alter. As we have seen, frogs go down into the mud to sleep. But if we like we can keep a frog awake all the winter. We have only to keep him moist and warm and feed him, and he will not want to sleep night and day.

We know that men kept in a temperature equalling that of their own bodies, and doing nothing, can go without food for a long time. It is only at the beginning that hunger and thirst are felt; afterwards there is generally only a desire to sleep. Of course, if a man were moving about, or doing work, the case would be quite different; he would soon die. But keeping still in a warm place with pure air, a man can live many days without food or water. If a man can do this, we need not be surprised that cold-blooded animals like reptiles and amphibia and fishes can pass a winter without food.

It is not so easy for an animal which needs occasional meals to hibernate. It is hardest, of course, for the flesh-eating animals. They have never yet learned to store up food for the winter, except in the case of the Arctic fox, which does hide the bodies of captured animals, to be eaten when he wakes up now and again during the winter. It is wonderful that even a little animal like the Arctic fox should be able to

make this provision. Of course, it would be impossible for a great bear to lay aside enough to keep himself fed during a long winter. He knows that, so he goes to sleep entirely, and eats nothing, making himself, by so doing, one of the greatest wonders of animal creation. Hibernation is a mysterious and fascinating subject, and there is still a great deal to be learned about it even by wise men.

The summer sleep of some animals is not such a simple matter for us to study. We have all noticed that on a hot summer day a heavy, drowsy feeling steals over us, and old people usually go to sleep during the afternoon. Sitting in front of a hot fire on a winter afternoon or evening will also have this effect. Well, the same sort of thing happens to animals, but with them it is a sleep for a season. Reptiles are most commonly affected in this way. The crocodile makes himself a bed deep down in the mud, and lets the sun bake the latter into a hard crust round him, and there he stays until rain comes to swell the river in which he makes his home. Then he breaks out of his muddy cradle, and is alert and hungry.

Snakes hide themselves in the same way, but let us beware of disturbing one. Summer-sleeping serpents are vicious if aroused. But the sleep during summer is not confined to the reptiles; the mud-fishes make a place for themselves in the mud. The water of the river dries up; the mud hardens until it is like stone, but the fish lies asleep inside, absolutely unharmed. And while it is in that state we can dig it up in its muddy case and bring it over the ocean, and wash it out of its earth into a tank in one of our conservatories, and it will live and flourish.

It is necessary that some animals should go to sleep to avoid the hardships of winter; it is just as necessary that others should sleep during the scorching heat of summer. The blazing sun of tropical lands burns up the vegetation, and dries up the streams. If these animals remained awake, there would be nothing for them to eat. They have, therefore, to make the best of matters where they are.

CONTINUED FROM PAGE 6102.

SOME authors write histories, some biographies, some novels, some works of science, but Henry David Thoreau, author of "Walden," did none of these. He wrote Nature books, delightful stories of his life in the fields and the woods—tales of the birds and the bees and the flowers. In "Walden," in "The Maine Woods," in "Excursions," we hear the sweep of the wind through the treetops, and the chatter of the squirrels, or feel the snow crunch under our feet or hear the swish of the rain-wet grass in the summertime as "really truly" as if we were living in the woods ourselves.

WALDEN: By HENRY DAVID THOREAU

SPRINGTIME AT WALDEN POND

As it grew darker, I was startled by the *honking* of geese flying low over the woods, like weary travellers getting in late from southern lakes. Standing at my door, I could hear the rush of their wings; when, driving toward my house, they suddenly spied my light, and with hushed clamour wheeled and settled in the pond. In the morning I watched the geese from the door through the mist, sailing in the middle of the pond, fifty rods off, so large and tumultuous that Walden appeared like an artificial pond for their amusement. But when I stood on the shore they at once rose up with a great flapping of wings at the signal of their commander, and when they had got into rank circled about over my head, twenty-nine of them, and then steered straight for Canada, with a regular *honk* from the leader at intervals.

At the approach of spring the red-squirrels got under my house, two at a time, directly under my feet as I sat reading or writing, and kept up the queerest chuckling and chirruping and vocal pirouetting and gurgling sounds, that ever were heard; and when I stamped they only chirruped the louder, as if past all fear and respect in their mad pranks, defying humanity to stop them. No you don't—chickaree—chickaree. They were wholly deaf to my arguments, or failed to perceive their force and fell into a

strain of invective that was irresistible.

The first sparrow of spring! The faint silvery warblings heard over the partially bare and moist fields from the blue-bird, the song sparrow, and the red-wing, as if the last flakes of winter tinkled as they fell. The marsh-hawk, sailing low over the meadow is already seeking the first slimy life that awakes. The sinking sound of melting snow is heard in all dells, and the ice dissolves apace in the ponds. The grass flames up on the hillsides like a spring fire, as if the earth sent forth an inward heat to greet the returning sun.

THE BATTLE OF THE ANTS

One day when I went out to my wood-pile, or rather my pile of stumps, I observed two large ants, the one red, the other much larger, nearly half an inch long, and black, fiercely contending with one another. Having once got hold they never let go, but struggled and wrestled and rolled on the chips incessantly. Looking farther, I was surprised to find that the chips were covered with such combatants, that it was not a duel but a war between two races of ants, the red always pitted against the black, and frequently two red ones to one black. The legions of these Myrmidons covered all the hills and vales in my wood-yard, and the ground was already strewn with the dead and dying, both red and black. On every side they were engaged in deadly combat, yet without any noise that I could hear, and human soldiers

never fought so resolutely. I watched a couple that were fast locked in each other's embraces, in a little valley amid the chips, now at noonday prepared to fight till the sun went down, or life went out. The smaller red champion had fastened himself like a vise to his adversary's front, and through all the tumblings on that field never for an instant ceased to gnaw at one of his feelers near the root, having caused the other to go by the board; while the stronger black one dashed him from side to side, and, as I saw on looking nearer, had already divested him of several of his members. They fought with more pertinacity than bull-dogs. Neither manifested the least disposition to retreat. It was evident that their battle-cry was Conquer or die. In the meanwhile there came along a single red ant on the hillside of this valley, evidently full of excitement, who either had despatched his foe, or had not yet taken part in the battle; probably the latter, for he had lost none of his limbs: whose mother had charged him to return with his shield or upon it. He saw this unequal combat from afar,—for the blacks were nearly twice the size of the red,—he drew near with rapid pace till he stood on his guard within half an inch of the combatants; then, watching his opportunity, he sprang upon the black warrior, and commenced his operations near the root of his right fore-leg, leaving the foe to select among his own members.

I took up the chip on which the three I have particularly described were struggling, carried it into my house,

and placed it under a tumbler on my window-sill, in order to see the issue. Holding a microscope to the first mentioned red ant, I saw that, though he was assiduously gnawing at the near fore-leg of his enemy, having severed his remaining feeler, his own breast was all torn away, exposing what vitals he had there to the jaws of the black warrior, whose breast-plate was apparently too thick for him to pierce; and the dark carbuncles of the sufferer's eyes shone with ferocity such as war only could excite. They struggled half an hour longer under the tumbler, and when I looked again the black soldier had severed the heads of his foes from their bodies, and the still living heads were hanging on either side of him like ghastly trophies at his saddle-bow, still apparently as firmly fastened as ever, and he was endeavouring with feeble struggles, being without feelers and with only the remnant of a leg, and I know not how many other wounds, to divest himself of them; which at length after half an hour more, he accomplished. I raised the glass, and he went off over the window-sill in that crippled state. Whether he finally survived that combat, and spent the remainder of his days in some Hotel des Invalides, I do not know; but I thought that his industry would not be worth much hereafter. I never learned which party was victorious, nor the cause of the war; but I felt for the rest of the day as if I had my feelings excited and harrowed by witnessing the struggle, the ferocity and carnage, of a human battle before my door.

CAPTURE OF THE INCA: By WILLIAM HICKLING PRESCOTT

"The Capture of the Inca" is an exciting bit of narrative taken from Prescott's "Conquest of Peru," a book which most girls and all boys will enjoy reading. The book tells the romantic story of the Spaniards' march over the Andes and of the wonderful ancient towns and tribes that lived long ago in those great South American mountains. In the selection given here, the Spaniards, under Pizarro, their commander, have just entered the city of Caxamalca, and are about to entrap the Inca—or Indian king. "The Conquest of Peru," like Prescott's other entertaining histories, was written by the author under the greatest difficulties, as he had but the use of one eye, the other having been blinded in a school-boy frolic by a blow on the eyeball with a hard crust of bread.

It was not long before sunset when the van of the royal procession entered the gates of the city. First came some hundreds of the menials,

employed to clear the path from every obstacle, and singing songs of triumph as they came, "which, in our ears," says one of the Con-

querors, "sounded like the sounds of hell!" Then followed other bodies of different ranks, and dressed in different liveries. Some wore a showy stuff, checkered white and red, like the squares of a chess-board. Others were clad in pure white, bearing hammers or maces of silver or copper; and the guards, together with those in immediate attendance on the prince, were distinguished by a rich azure livery, while the large pendants attached to the ears indicated the Peruvian noble.

Elevated high above his vassals came the Inca Atahualpa, borne on a sedan or open litter, on which was a sort of throne made of massive gold of inestimable value. The palanquin was lined with the richly-coloured plumes of tropical birds, and studded with shining plates of gold and silver. The monarch's attire was much richer than on the preceding evening. Round his neck was suspended a collar of emeralds, of uncommon size and brilliancy. His short hair was decorated with golden ornaments, and the imperial borla encircled his temples. The bearing of the Inca was sedate and dignified; and from his lofty station he looked down on the multitudes below with an air of composure, like one accustomed to command.

As the leading files of the procession entered the great square, larger, says an old chronicler, than any square in Spain, they opened to the right and left for the royal retinue to pass. Everything was conducted in admirable order. The monarch was permitted to traverse the plaza in silence, and not a Spaniard was to be seen. When some five or six thousand of his people had entered the place, Atahualpa halted, and, turning round with an inquiring look, demanded, "Where are the strangers?"

At this moment Fray Vicente de Valverde, a Dominican friar, Pizarro's chaplain, and afterwards Bishop of Cuzco, came forward with his breviary, or as other accounts state, a Bible, in one hand, and a crucifix in the other, and, approaching the Inca,

told him that he came by order of his commander to expound to him the doctrines of the true faith, for which purpose the Spaniards had come from a great distance to his country. The friar then explained, as clearly as he could, the mysterious doctrine of the Trinity, and, ascending high in his account, began with the creation of man, thence passed to his fall, to his subsequent redemption by Jesus Christ, to the crucifixion and the ascension, when the Saviour left the Apostle Peter as his Vicegerent upon earth. The friar concluded with beseeching the Peruvian monarch to receive him kindly; to abjure the errors of his own faith, and embrace that of the Christian now proffered to him, the only one by which he could hope for salvation; and, furthermore, to acknowledge himself a tributary of the Emperor Charles the Fifth, who, in that event, would aid and protect him as his loyal vassal.

The eyes of the Indian monarch flashed fire, and his dark brow grew darker as he replied, "I will be no man's tributary! I am greater than any prince on earth. Your emperor may be a great prince; I do not doubt it, when I see that he has sent his subjects so far across the waters; and I am willing to hold him as a brother. As for the Pope of whom you speak, he must be crazy to talk of giving away countries which do not belong to him. For my faith," he continued, "I will not change it. Your own God, as you say, was put to death by the very men whom he created. But mine," he concluded, pointing to his deity, — then alas! sinking in glory behind the mountains, — "my God still lives in the heavens, and looks down on his children."

He then demanded of Valverde by what authority he had said these things. The friar pointed to the book which he held as his authority. Atahualpa, taking it, turned over the pages a moment, then, as the insult he had received probably flashed across his mind, he threw it down with vehemence, and exclaimed, "Tell your comrades that they shall give me an

account of their doings in my land. I will not go from here till they have made me full satisfaction for all the wrongs they have committed."

The friar, greatly scandalised by the indignity offered to the sacred volume, stayed only to pick it up, and hastening to Pizarro, informed him of what had been done, exclaiming at the same time, "Do you not see, that, while we stand here wasting our breath in talking with the dog, full of pride as he is, the fields are filling with Indians! Set on at once! I absolve you." Pizarro saw that the hour had come. He waved a white scarf in the air, the appointed signal. The fatal gun was fired from the fortress. Then springing into the square, the Spanish captain and his followers shouted the old war-cry of "St. Jago and at them!" It was answered by the battle-cry of every Spaniard in the city, as, rushing from the avenues of the great halls in which they were concealed, they poured into the plaza, horse and foot, each in his own dark column, and threw themselves into the midst of the Indian crowd. The latter, taken by surprise, stunned by the report of artillery and muskets, the echoes of which reverberated like thunder from the surrounding buildings, and blinded by the smoke which rolled in sulphurous volumes along the square, were seized with a panic. They knew not whither to fly for refuge from the coming ruin. Nobles and commoners, — all were trampled down under the fierce charge of the cavalry, who dealt their blows right and left, without sparing; while their swords flashing through the thick gloom, carried dismay into the hearts of the wretched natives, who now, for the first time, saw the horse and his rider in all their terrors. They made no resistance, — as, indeed, they had no weapons with which to make it. Every avenue to escape was closed, for the entrance to the square was choked up with the dead bodies of men who perished in vain efforts to fly; and such was the agony of the survivors under the terrible pressure of their assailants, that a large body of Indians, by their con-

vulsive struggles, burst through the wall of stone and dried clay which formed part of the boundary of the plaza! It fell, leaving an opening of more than a hundred paces, through which multitudes now found their way into the country.

Meanwhile the fight, or rather massacre, continued hot around the Inca, whose person was the great object of the assault. His faithful nobles, rallying about him, threw themselves in the way of the assailants, and strove, by tearing them from their saddles, or, at least, by offering their own bosoms as a mark for their vengeance, to shield their beloved master. . . .

The Indian monarch, stunned and bewildered, saw his faithful subjects falling around him without comprehending his situation. The litter on which he rode heaved to and fro, as the mighty press swayed backwards and forwards; and he gazed on the overwhelming ruin, like some forlorn mariner, who, tossed about in his bark by the furious elements, sees the lightning's flash and hears the thunder bursting around him, with the consciousness that he can do nothing to avert his fate. At length, weary with the work of destruction, the Spaniards, as the shades of evening grew deeper, felt afraid that the royal prize might, after all, elude them; and some of the cavaliers made a desperate attempt to end the affray at once by taking Atahualpa's life. But Pizarro, who was nearest his person, called out with stentorian voice, "Let no one who values his life, strike at the Inca;" and, stretching out his arm to shield him, received a wound on the hand from one of his own men, — the only wound received by a Spaniard in the action.

The struggle now became fiercer than ever round the royal litter. It reeled more and more, and at length several of the nobles who supported it having been slain, it was overturned and the Indian prince would have come with violence to the ground, had not his fall been broken, by the efforts of Pizarro and some other of the cavaliers, who caught him in their arms.



CONTINUED FROM PAGE 6201

THE FIRST APPLE DUMPLING

THE princess was looking up at the apple-tree, when — plop! down fell an apple at her feet!

It was not a common, ordinary apple, or it would not have been growing there, but a golden pippin.

"Oh dear!" said the princess, picking it up. "I hope you haven't hurt yourself."

"They dared me to do it," said the apple — "the other apples, you know. They said I should be afraid to let go my stalk and jump. And now I *have* done it, and I'm sorry, for someone will want to eat me, and I am not nearly ripe enough!"

"I will hide you," said the princess.

And she ran into the palace to look for a hiding-place. But whenever she opened a box or a cupboard the apple cried, "That won't do. Someone will be sure to find me there!"

The princess went all over the palace, upstairs and down, looking for a safe hiding-place for the apple; and at last she came to the kitchen. The chief cook was rolling out paste with a golden rolling-pin to make a roly-poly pudding with golden syrup in it for the princess's dinner.

She was still looking about for a hiding-place when one of the silver saucepans boiled over, and the chief cook left off rolling the paste to attend to it. The instant his back was turned, the princess took some paste and wrapped the apple up in it.

"No one will think of looking for you there," she whispered.

Then she saw that the door of an oven, out of which a cook had just taken a tray of tarts, was open, and she popped the apple in, to hide it twice over, and went away.

"Dear me, what is this?" asked the king at dinner, as he caught sight of a round brown thing on a dish.

"I don't know, your Majesty," was the answer. "The chief cook said he found it in the oven."

"It looks rather like a baked snowball," said the king. "But it smells good. Give me a knife, and I'll see."

"My dear," said the queen, "pray be careful. Suppose it should go off suddenly and blow us up!"

"Pooh!" said the king boldly. "Who's afraid?" And he cut it in two with a single stroke of the knife.

"Why," he said, "it looks like an apple. And yet it can't be. For how could an apple get inside —"

"If you please, papa," put in the princess, "I think it must be the apple I had. It wasn't ripe, you know, and was afraid someone would eat it. But perhaps it won't mind so much now it is cooked. And I think I should like a piece."

The next day the king said:

"Tell the chief cook to ask the princess to be so good as to show him how to hide some more apples."

And that is how apple dumplings were first invented.

THE FIRST HOME, SWEET HOME

A TALE OF A HUNDRED THOUSAND YEARS AGO

AFTER the wild dog pack swept all the animals from the land around the Thames, Wawa and his tribe had bad living. They were hunters who fed chiefly on meat. They did not know how to till the soil and grow food, and were compelled to live on acorns and wild fruit.

Swar did not like acorns.



WAWA SAT THINKING HOW TO KEEP UP THE FIRE

"This is pigs' food," he said, one day, to his father. "Even my dog will not eat it!"

"He'll eat it," said Wawa impatiently, "when he is starving like the rest of us."

But the strange thing was that Swar's little dog never seemed to get hungry. Wawa sat by the great camp fire on Cornhill, trying to think how he could get meat for the tribe to live on. Like his people, he was very lean and

worn, and he was losing his wonderful strength of arm.

"I am afraid, my little son," he said to Swar, "we must tramp back and see if the terrible dog pack has left any game there. We shall starve if we stay here."

He rose up wearily to examine the trees and make plans for building a huge raft. The Thames in those days was a wide swirl of water resembling the Amazon and the Mississippi. Instead of flowing into the sea, it ran into the Rhine. It was more by chance than by skill that the tribe had crossed the river safely in the summer; and now that it was swollen with autumn rains, it seemed impossible to return.

"Still, we must risk it," said Wawa, speaking round the camp fire that evening to all the tribe. "It is clear that if we stay here we shall perish. The wild dog pack may return and destroy us. Even if we escape that danger, we shall not live through the winter, with nothing growing on the trees, and no game in the forest."

As he spoke, the little dog came running through the jungle with something in its mouth. Terror, as he was now called, dropped what he carried at Swar's feet, and then looked up in the boy's face, waiting for a sign of approval.

"By all the glory of the sun," shouted Wawa joyfully, "the little Terror has saved us! Look, he has brought good meat!"

"Hunting! Good hunting!" shouted the tribesmen.

Wawa held up a dead rabbit. Being hunters of big game, he and his men had only searched the jungle for the tracks of deer and of wild sheep and oxen. The night raid of the dog pack

had killed many rabbits and those that remained dared not show themselves in the daylight. Terror had hunted them by scent in the darkness. Having made a good meal, he had killed for his companions, and brought his kill to Swar.

Terror was furious when Wawa seized the rabbit and held it up for the tribe to see. Leaping up with a snarl, he dragged the animal out of the chief's hand, and again laid it at Swar's feet, and then stood by, growling, ready to attack anybody who tried to rob his master of the spoil.

Wawa roared with laughter, and stooped and patted the faithful dog.

"Well done, Terror!" he said. "After all, Swar is your chief, and you owe your life to him. He shall have the rabbit, and we shall all profit by the lesson you have given us."

All thought of re-crossing the mighty river was now given up. The young tribesmen were soon busily engaged in searching for rabbits. The older men made a temporary camp in a flint quarry, and chipped some of the smaller flints into small rough stone knives, sharper-edged than the great stone axes they were accustomed to use. Then the women, taking new knives, with infinite care, cut the skins of their tents into thin strips of leather, and with these made a great quantity of snares, which were placed over all the rabbit holes found in the forest.

Thus the tribe at last managed to get food as winter was coming on, when fruit of all kinds was becoming rare. Unfortunately, all the tent skins had to be used in making the snares, and when it began to rain heavily, life in the camp became very uncomfortable.

There were days when the great tribal fire was almost put out by the continual downpour, and Wawa became very anxious. In those days there was no one who knew how to kindle a fire. Men had not discovered how to

make a flame. It was from rare forest fires and from distant volcanoes that the tribes obtained the blaze they guarded so carefully.

Wawa had carried his precious fire all the way from France, and had built rafts to carry it over the rivers he crossed on his strange journey into the unexplored jungles of England. Now he sat thinking vainly for hours of some means of preserving the sacred camp fire from being put



"WE WILL FIGHT FOR THE CAVES," SAID WAWA

out by the unceasing torrent of rain.

Wawa was a very wise man — one of the wisest men who ever lived in any period of the history of the world. He was only a savage, ignorant of everything on which our own civilised life is based. No savage in the wildest country at the present day is as wild as he was. He and his people clad themselves in skins which they could not even roughly sew together. Several

thousand years had to pass before men learned how to make a rough needle by boring through a small wing-bone of a bird. Another vast period of time then followed before men discovered how to sow grain and gather it and store it. There are some ants—farmer-ants they are called—that do this. But no man in Wawa's time was as wise as these ants.

And yet, though he lived in that far-off time, Wawa was a man of genius. He could invent new things. It was by the slow and painful efforts of men of his sort that mankind gradually improved its way of living. Wawa first tried to protect his fire from the rain by building over it a rough shelter of leafy boughs. But the shelter was so badly built that the wind blew it down, and, in falling, it almost put out the fire.

"So that won't do!" said Wawa angrily.

Not knowing how to sew, he could

not make new coverings out of rabbit-skins, and for some hours he sat by the flickering fire, puzzling his brains. He did not go to sleep that night.

"Come with me, Swar," he said to his little son, at daybreak, "and bring your dog with you. I want to explore that hill where I found you with the lioness."

Nothing stirred in the jungle, and when they came to the northern height, they found that that too was deserted. The wild dog pack had swept the caves in the hillside free from the huge beasts of prey that used to dwell there.

"The great beasts will come back," said Swar, "won't they, Daddy?"

"Yes, my son," said the chief grimly. "They'll come back when the deer and the other game return. But they will find their caves occupied. Then we will fight for the caves, and see who is master, man or the animals!"

That was how, thousands of years ago, man first made a home in a cave.

WHEN THE FIRE WENT OUT

OUTSIDE the largest of the caves on the northern heights of London, a little boy, clad in a tiger-skin, was hammering at a flint with a stone axe. All around stretched the rank, green jungle growth. Over the tops of the sycamores and fig-trees the Thames could be seen, a great breadth of shining water, nearly a mile broad in places, and terribly swift. It swept into the Rhine. This was thousands of years ago.

"Look at the fire in the stone!" cried the little boy to his father, as with his stone axe he struck sparks out of the flint. "Oh, look at the fire in the stone!"

A broad-shouldered man, a mane of red hair falling over his back, and a great red beard and moustache almost hiding his face, came out of the cave, laughing. He was Wawa, the chief who had led his tribe across the river which divided France from England.

"So you have found out, little Swar," he said, "that there is fire magic in stones. All the tribe knows that, my little son."

"Then why don't you make a fire with it?" said Swar.

"We can't make fire out of magic," said Wawa rather sadly. "Not even the greatest wizard can do that. By the flaming sun, I wish we could get fire from the stone, now that the rains are setting in!"

And he went back slowly into the great cave to see that the tribal fire was burning well and bright. In those distant days man had not yet learned how to make fire. Here and there a tribe had found a forest blazing in a summer drought, and, snatching some flaming branches, had made a fire. In other places, far to the south of Europe, fire had been got from a volcano. It was the thing which the poor ignorant savages valued most.

On the young unmarried girls of the tribe fell the duty of feeding the fire night and day, and keeping it alight. The tribesmen used the fire to harden and sharpen the wooden spears with which they did most of their hunting. After being charred, the ends of the wooden sticks were scraped with sharp

flints. It took a week to chip into shape a great stone axe, while with a fire a wooden spear could be made in a minute or two; so these spears only were employed in ordinary hunting.

Swar, who had just reached his seventh year, had resolved to attack nothing smaller than a mammoth. There were several of these huge, woolly elephants in the jungle which stretched between Hampstead and the Thames; and two days before, while Swar was squatting by his father's side near where Camden Town now is, he had caught a glimpse of one of the great beasts.

In serious, childlike fashion he went on hammering at the big stone which he wished to make into an axe. Sometimes he hit the stone; sometimes he hit his fingers. There was not enough strength in his little brown hands to strike the least bit off the great flint. Terror, the wild dog which he had found when a puppy, and trained, kept frisking round him, and trying to get him to play. But for some time Swar vainly went on with his work. He had seen two tribesmen making a tremendous stone axe for his father, and naturally he, too, wanted to make one for himself.

Suddenly he was interrupted. A young tribesman came running up the hill, breathless and wild with excitement.

"Deer!" he shouted, "A great herd of deer down by the river!"

Out of all the caves rushed a crowd of joyous men and women and children. Winter-time was at hand, and the tribe had not seen any big game for months.

"Seven spears for every man!" cried Wawa, in a loud voice. "And down to the water at once! Women and children follow, and help to bring the meat home!"

Then Bina, his wife, spoke.

"But some one must remain at home to tend the fire," she said.

"Well, let the youngest children do that," exclaimed Wawa. "You know how we had to starve all the summer. It may be worse in the winter if the

dog-pack returns and sweeps the jungle again."

"Yes, yes!" shrieked all the tribesmen, dancing in excitement, and waving their spears above their heads. "We cannot lose a single deer. Leave one of their bodies for a minute, and a wolf or hyena will get it. The chief is right. All the women must come with us."

Wawa was already running down through the jungle at a hard, steady pace. His men whooped, and then followed him silently and swiftly; and the women and girls and older boys went after the men.

Bina stayed behind for a minute, and talked to her little son.

"Now, Swar," she said very earnestly, "you must be a great chief like your father, and see that all the children keep the fire burning. Make them bring a lot of branches and put them all carefully on the flames."

"Very well, mother," said Swar proudly. "You'll see, I'll make the biggest fire in the whole world."

When his mother went away it began to rain heavily. But this did not daunt Swar. It was the first time he had been set in authority, and he was resolved to astonish the tribe by his magnificent work. He kept the children for hours running out into the jungle, and tearing down wet, dripping branches. At last a big mass of soaking leaves was built above the fire, and Swar was still keeping the children busily employed, when the tribesmen came tramping back with the spoils of the hunting.

Wawa dropped the two deer he was carrying when he saw what his little boy had done.

"By all the splendour of the sun," he cried, in a wild voice, "what have you children done to the fire?"

He began to tear away the stack of wet leaves. Quickly the men saw what was the matter, and so did the women. Shrieking with fright, they, too, tore at the wet green stuff, and at last pulled it all off the hearth. But it was too late—the rain-water had completely put out the fire. Where it had been, there was now only a pool of mud.

In the darkest corner of the cave

crouched Swar, sobbing as though his heart would break. His father was too upset to be angry with his little boy. The loss of the fire was the most terrible disaster which could have occurred to a tribe. It left them open to attack from the most cunning and the most savage of all the wild beasts—the huge cave bear and the huge cave lion. At first Wawa thought it would be safer to camp out in the jungle; but it was still raining heavily, and the tribe now had no skin tents. They had used all their skins in making snares.

"Well," he said, at last, "the women and children must sleep together in this big cave, and the men must take turns in keeping awake and watching over them."

"You sleep, too, chief," said one of his men. "You must be more tired than any of us."

"No, I will help you keep watch," said Wawa wearily. "I must think of a way," he added. "Oh, if only there was a tribe from whom we could borrow fire!"

But there was no other tribe within a hundred and fifty or two hundred miles.

"It will be necessary," thought Wawa sadly to himself, "to go back across the river."

As he was considering whether he

should wait till the meat was cured, or lead his tribe away at daybreak, a little figure came and nestled up to him.

"Father," said Swar softly, "couldn't we get some of the magic fire out of the stone?"

Wawa shook his head. He looked down at the ground, thinking of other things, and his eyes idly rested on a heap of dry leaves in a corner. The dawn was just breaking.

"That's it!" cried Swar, following his glance. "Let us set light to the leaves with the fire in the stone."

Sitting among the dry, withered stuff, he began eagerly to strike fire from the flint. His father watched him listlessly. Suddenly he started up with a cry of joy, and, taking the stone and the flint axe from his little son, he began to strike them together quickly and lightly and steadily. He had seen a spark burn a tiny hole in a very dry leaf.

Half an hour afterwards the men and women and children were awakened by a wild, shrill, strange song. Wawa was dancing about the cave, singing and holding Swar above his head. In a corner was a little smoking heap of leaves and twigs. Man had made the great discovery—he had found out how to make fire.

HOW THEY GOT A HOLIDAY

SOME schoolboys, who had failed to obtain a coveted holiday, thought of a plan for getting the schoolmaster out of the way.

"If we could only get him to think he is ill," said the eldest of them, "he would be ill"—which was perfectly true. So they arranged that, as they entered the school the next day, each one should say to the master: "Good morning, sir! I am sorry to see you looking so ill." The schoolmaster replied, "Ill? I'm sure I don't feel ill."

But when others made the same remark, after a little he shut his book, and said he would return home.

So the boys got their holiday. But the next morning they found nobody at the school.

"The master must be really ill," said the boys. "We had better inquire."

On the way they met a man, who told them that the schoolmaster lay tossing on his bed in a fever.

"Follow me," said the eldest boy, "and do as I do."

He led them into the sick-room, and, going up to the master, said: "Good morning, sir! You are looking quite yourself again."

"Am I?" said the schoolmaster. "I was feeling very ill."

"Oh, no," said the boys. "You are nearly well again. You ought to get up and take a walk."

"Perhaps you are right," said the sick man. He got up, and in a few hours had quite recovered.

GENERAL INDEX TO THE BOOK OF KNOWLEDGE

For titles of poems or first lines see Special Poetry Index following the General Index. Author's names are in both the indexes.

THIS Index, containing about twenty-five thousand entries, will enable you to find very quickly everything contained in The Book of Knowledge. It is not arranged exactly like an ordinary index, for the Book of Knowledge is not like any other book in the world. The book does not contain all the accumulated knowledge of the ages, but *those things which it is most important to know*, arranged so that they can be quickly and easily understood. Like an ordinary index, it is arranged alphabetically. In addition a number of the most important departments of knowledge in our index have special indexes of their own.

Many subjects are indexed twice or even three times. For example, you wish to know something about the Sun: look for the word and you will find dozens of references to the Sun and its work. Under **THE BOOK OF THE EARTH** you will find the story of the Sun and the Earth together. You will find Hockey in its place under the letter *H* and also under *Games*. You will have little trouble if you think for a second before you look.

The Special Poetry Index will prove a great help. The names of the authors are in the Great Index under their proper letters. They are also found in the Special Index and under each name are the titles of the poems by that author. Suppose you do not know an author's name: the titles of the poems and the first lines are given in their proper place according to the first letter of the first word, except that *A*, *An* and *The* are not considered words.

The book contains nearly ten thousand pictures, and, of course, only the most important could be indexed separately, but you will have little trouble in finding what you want. Almost every article is illustrated, and if you look in the index for the most important word in the subject you are likely to find pictures on or near the pages to which you are directed.

Think of what you want and look under the most important word. If you want a person, look under his name; if you want a country, look under its name. Everything is indexed under the word you are most likely to think of. For Poetry, see the Special Poetry Index.

- A B C**, how to learn the **A B C**, 245
A. D., what it means, 192
A. M., what it means, 1542
Aar, river, in Switzerland, 2962
Aardvark, life-story, 1002; picture, 1001
Abbas, Shah, what he did for Persia, 3880
Abbe Constantin, story of the book, 4761
Abbey, Edwin A., art of, 4152
Abbey Craig monument, 748 picture, 5013
Abbott, Sir John, as premier, 1248
Abbreviations, the meaning of, 5645
Abd-el-Kader, Arab chief, his life, 3167
Abdul Hamid II., sultan of Turkey, 3226
Abelard, Peter, monk, his life, 3984
Aberdeen, Earl of, governor-general, 1248
Abolitionists, their aims, 2008
Abraham, settled in Palestine, 3873, 6217 his visit to Egypt, 4786
Abruzzi, Duke of, picture, 4725
Abu Bekr, caliph, 3876
Abyssinia, its people, 4260
Academy, of Fine Arts, 4149 of Plato, 5510
Acadia, English press claims against, 539 granted to Sir W. Alexander, and called Nova Scotia, 219, 539 inhabitants transported, 884 Nova Scotia so-called, 5601 settlement of, 218, 537, 879 taken by English, 881, 539
Acateango, volcano, with picture, 4390
Acceleration, what it is, 3432
Accidents, what to do in case of accident, 5110
Achilles, and Amazon queen, story, 962
Acid, different degrees of power, 1801 formulas of acids, 1798 found in fruit, 4748 produced in the stomach, 2345 what is meant by an acid, 1797
Acid salts, what they are, 1801
Acocnagua, peak, 2502, 4497, 4569
Acontia, lizard with no legs, 1219
Acorn, planted by jays, 2209 will grow in water, 2564
Acre, was captured, 1590
Acropolis, hill at Athens, 3220 its buildings, 5128 picture, 5121
Acting proverbs, game, 5202
Actinolite, in Canada, 5600
Actium, battle of, 5709
Active voice, verb in, 3370
Adam, Robert, his work, 6125
Adams, Abigail, life of, 388 picture, 387
Adams, Herbert, a sculptor, 4850
Adams, John, administration, 3533 as president, 1394 as vice-president, 1390 Declaration of Independence, 4468 heard "Hail Columbia," 2956 letter prophesying celebration of Independence Day, 4468 pictures, 1395, 3532
Adams, John, discovered Neptune, 2429
Adams, John Quincy, administration, 3534 as president, 1828 picture, 3532
Adams, Maude, life and work, 3065
Adams, Samuel, arrested by British, 982 opposed Constitution 1390
Adams, Sarah Flower, wrote hymns, 1998
Addams, Jane, life and work, 3064
Adder, how its fangs are arranged, 160
Adder's Tongue, description, 2837
Addison, Joseph, life, with portrait, 4675 poems: see Poetry Index with Steele, picture, 4677
Address book, how to make, 2872
Adelaide, capital of South Australia, 1362
Aden, coaling station, 1876
Adenoids, 6182
Adjective, what it is, 2649
Adjective letter, game, 5196
Adjutant, bird, 1955; picture, 1953
Adrianople, was taken by the Turks, 3154
Adriatic Sea, where it is, 3149
Ad-Vance, the, blockade-runner, 2019
Aeetes, king of Colchis, 186
Aegean Sea, 3149, 5121
Aeneas, a Trojan hero, 70, 5260
Aeneid, the story of the Aeneid, 70
Aenopon, a king of Chios, 3313
Aolian lyre, a musical instrument, 1015
Aolians, Hellenic tribe, 5124
Aeolus, the god of the wind, 1015
Aerated bread, 1872
Aeroplane, how high can a man fly, 5685

INDEX

Aeroplane, how it works, pictures, 163

pictures, 6085-89
 Death of Pegoud, 6085
 importance in war, 6084
 long distance flights, 6082
 looping the loop, 6084
 movable repair shops in war time, 6085
Æpyornis, bird, with picture, 1424, 1425
Æsop, made a slave, 2910
 telling his fables, picture, 2908
Æsop's fables, angler and the little fish, 3853
 ant and the grasshopper, 2141
 ass in the lion's skin, 3853
 belling the cat, 463
 boy who cried "wolf," 3310, 5238
 boys and the frogs, 2303
 cat and the mice, 4274
 cat, the eagle, and the sow, 4805
 crab and her mother, 3062
 crow and the pitcher, 3508
 dog and the ass, 2849
 dog and the shadow, 560
 dog and the wolf, 1979
 dog in the manger, 189
 donkey's wish, 2378
 dove and the ant, 189
 farmer and his sons, 2303
 farmer and the stork, 2939, 4755
 fir-tree and the bramble, 4274
 fowl and the jewel, 560
 fox and the bear, 3852
 fox and the crow, 463
 fox and the frog, 4008
 fox and the goat, 3310, 5238
 fox and the grapes, 560
 fox and the lion, 3310, 5238
 fox and the mask, 2303
 fox and the wolf, 2378
 fox in the well, 463
 frogs and the bulls, 4804
 frogs who wanted a king, 462
 goat and the lion, 3508
 goddess and the tree, 4804
 goose with the golden eggs, 3852
 hare and the tortoise, 462
 hen and the fox, 4008
 Hercules and the countryman, 5205
 horse and groom, 1793
 horse and the ass, 2849
 Jackdaw and the pigeons, 3852
 Jupiter and the ass, 3310, 5238
 lark and her young ones, 2378
 lawyer and the pears, 2849
 lion and the four bulls, 3508
 lion in love, 4804
 man and his negro servant, 4805
 Mercury and the woodman, 2939
 oak and the reed, 5205
 old hound, 3124
 old man and his sons, 3062
 peacock and Juno, 4008
 peacock and the crane, 5205
 proud frog, 877, 4278
 sick kite, 5205
 snake and the file, 1793
 stag in the ox-stall, 4805
 stag looking into the water, 2939, 4755
 thief and the dog, 3852
 tortoise and the eagle, 3062
 town mouse and the country mouse, 3124
 travellers and the bear, 4274
 two frogs, 3508
 two loaded asses, 2141
 vain Jackdaw, 877, 4278
 villager and the viper, 3310, 5238
 wind and the sun, 3853
 wolf and the crane, 560, 4278
 wolf and the kid, 2141, 2939, 4755
 wolf and the lamb, 1793
 wolf in sheep's clothing, 463, 2303
 woman and the empty cask, 3853
Afforestation, what it means, 3077, 5789
Afghan bands, conjuring trick, 836
Afghanistan, its history, 3938; map, 3933
Afghans, are Mussulmans, 1550
 besieged Ispahan, 3880
 picture, 3939
 ruled in Hindustan, 1700
Africa, animals, 1766, 3076, 4251, 4260
 Chinese in, 1768
 climate and products, 1768, 3076

Africa, deserts and forests, 3072

explorers of, 279
 extinct animals in, 5571
 French power in, 2399
 how the Germans colonised it, 2756
 how the Romans won it, 416
 maps, 281, 4253
 native tribes, 4038
 outside the British Empire, 4251
 people, 1766, 4251
 physical features, 4253
 pigmies in, 5569
 railways, 4262
 slavery in, 1769, 4252
 the British Empire in Africa, 1765
 White Man's (the) Grave, 5641
 See also North Africa, South Africa, and names of countries
Africander, influenced by Moffat, 3483
After-images, what they are, 3035
Agamemnon, led the Greeks, 67
 palace discovered, 5122
Agatha, St., her martyrdom, 1013
Age, why we grow old, 2875
Agessander, partly made the Laocoon, 4166
Agincourt, battle of, 754, 2706
 priest blessing the troops, picture, 753
Agnes, Lady, of St. Dunstan's Tower, legend, 3312
Agnes of the Snow, story, 3253
Agouti, animal, 506, 670; picture, 667
Agra, city in India, 1550
Agramonte, Aristides, helped to conquer yellow fever, 3200
Agricola, built forts, 196
 governed in Britain, 531
Agricultural ant, grows crops, 2948
Agriculture, improvement of plants, 3486.
 in arid regions, picture, 2419
Agriculture, U. S. Department of, 1597
Agrimony, pictures, 4967
 what it is like, 4570
Agrippina, picture, 530
 poisoned her husband, 530
Agua, Volcano de, in Guatemala, 4387
Aguineldo, leader of the Filipino rebellion, 2184
Ahasuerus, king of Persia, 5064
Ahaz, king of Judah, 4978
Ahmedabad, Jain temple, picture, 2997
Ahriman, a god of the Zoroastrians, 3000
Al, a kind of sloth, 862
Aidan, was a missionary, 430
Ainos, settled in Japan, 364
Air, air, fire, and water, 937
 and water, simple experiments with, 5898
 as a food, 2696
 dissolves in water, 3762
 fresh air and healthy lives, 1787
 ground air, what it is, 912
 has tides, 37
 how it is kept pure, 5789
 how it is kept round the earth, 5024
 how it is renewed, 2077
 how it purifies the blood, 6253
 how to feel the pressure of the, 5660
 is always changing, 1128
 is full of tiny creatures, 45
 is impure air lighter than pure air, 5957
 is made of gases, 1130, 1196
 is necessary to sound, 3863, 4581
 is night air dangerous, 5850
 is part of the earth, 310, 838, 3691
 its pressure, 1575, 3941
 its specific gravity, 3816
 its weight, 685, 1127, 1574
 stops the light of the sun, 3691
 the gases it contains, 285
 use of, in our bodies, 6253
 where the bad air goes, 4550
 why it is fresher after rain, 1859
 why it seems hot before thunder, 1641
 will the last man gasp for air, 5847
Aira Force, a waterfall, 1108
Air-brake, invented, 2670
Air-breathing animal, picture, 44
Air-cells, the ending of the bronchi, 1636
Aird, Sir John, contractor for the Assouan dam, 5401
Air-passages, in body, picture, 1635

INDEX

- Airships**, pictures, 161
Air-waves, can be felt, 3756
Airy, Sir G. B., made maps of the skies, 1662
 opposed laying Atlantic cable, 2474
 portrait, 1655
Aix-la-Chapelle, peace of, 540
 town of Germany, 2752
Akbar, pictures, 1698, 1699
 ruled over India, 1702, 5795
Akkad, name for Chaldaea, 4974
Akkadians, people of Mesopotamia, 4974
Alabama, admitted, 1824, 3534
 its industries, 5985
 secedes, 2010, 3536
Alabama, the, privateer, 2015
 purchased, 3536
Alabaster, is a form of salt, 1800
Aladdin, and the wonderful lamp, story, with
 picture, 81
Alaric, attacked Rome, 627, 5263
Alarm clock, 1536
Alaska, history and description, with pic-
 tures, 2177, 4041
Alban, St., how he gave up his life, 482
Albani, Mme., 5870.
Albania, conquered by the Turks, 122
 national costume, picture, 3225
 part of the Turkish dominions, 3224
Albatross, life-story, 1625; picture, 1627
 nest of, picture, 5785
Albemarle, Duke of, proprietor of Carolina,
 523.
Albert, prince-consort, 2540
Albert, Jeanne d', queen of Navarre, 1654
Albert Hall, London, echoes in, 4583
Albert Memorial, 5004; picture, 5010
Albert Nyanza, Lake, 284, 4260
Alberta, added to Canada, 220, 1248
 cattle ranges, picture, 1241
 description of, 5368
 education in, 5233
 minerals in, 5599
 organised, 1247
 scenes in, pictures, 2265
Albertus Magnus, portrait, 4625
Albi, its cathedral, 2398
Albuera, battle of, 4364
Albumen, what it is, 1574, 3242
Alchemy, the beginning of chemistry, 1940
Alcohol, how it absorbs water, 1172
 its effect on the body, 1386, 1443, 3318
 its effect on the brain, 4344
 its specific gravity, 3816
 the different alcohols, 1871
Alcott, L. M., her story, Little Women, 5143
 life and home, with pictures, 2045, 2046
Alduin, monk, helped Charlemagne, 2064
Aldhydes, what they are, 1873
Aldgate, why it is so called, 198
Aldrich, Thomas Bailey: see Poetry Index
Alecto, paddle-boat, picture, 2471
Alemanni, settled in Switzerland, 2962
Alert, the, an exploring vessel, 4724
 and Essex, 1398
Alexander the Great, king of Macedon, his
 conquests, 1306, 1700, 4790, 5065, 5130
 stories concerning, 5308, 5312, 5313
 pictures, 1303, 5061
Alexander VI., pope, beautified the Vatican,
 4948
 invited Bramante to Rome, 4950
Alexander I., of Russia, his reign, 3631
Alexander II., of Russia, monument, 3222
 his reforms, 3632
Alexander III., of Russia, 3598, 3632
Alexander I., of Scotland, 3080
Alexander II., of Scotland, 3082
Alexander III., of Scotland, 3082
Alexander, C. F., wrote hymns, 1998, 4853
 poems: see Poetry Index
Alexander, John W., art of, 4152
 picture by, 4157
Alexander, Sir William, granted the whole of
 Acadia (Nova Scotia), 539
Alexandra, Queen, her early home, 3598
Alexandria, capital of Egypt, 5703
 Cleopatra's Needle set up, 5003
 its buildings, 4792
 its foundation, 4790
 its great library, 2802, 5705
Alexis, Czar, died of mushroom poisoning, 4753
Alfred, the, war-ship, 2898
Alfred the Great, as a writer, 6019
 founded London, 1158
 his life, 430, 5941
 how he fixed the time, 1535
 pictures, 433
 what kind of king he was, 2701
Algeria, Arab patriot of, story, 3167
 flag, picture in colour, face 1640
 how they telegraph there, 4313
Algiers, its climate, 2400
 picture, 4255
 taken by the French, 4261
Alhambra Palace, 3356; picture, 3362
Ali, was fourth caliph, 3876
Ali Baba and the Forty Thieves, story, with
 pictures, 182, 183
Alice in Wonderland, how the story was
 written, with picture, 1472, 1473
 the story, with pictures, 2928, 3054, 3114
Alien and Sedition Laws, passed, 1394, 3533
Alishan, Leon: see Poetry Index
Alkalies, what they are, 1799
Ali Red Route, what it is, 1364
Allah, god of Mohammedans, 1585, 3002
Allan, Sir William, his picture of Scott, 2309,
Allan-a-dale, his marriage, 2603
Allegory, what it is, 687
Alleluia, or sorrel, 3052
Allen, Ethan, takes Ticonderoga and Crown
 Point, 984, 1820
Allerton, Ellen P.: see Poetry Index
Alliance, the, war-ship, 2900
Alligator, its life-story, 1221; picture, 1229
Altingham, William: see Poetry Index
Alliteration, what it is, 469
Alloys, are mixed metals, 1870
Al's Well that Ends Well, story of the play,
 314
Allston, Washington, life and art, 4149
Alma River, passage of, 3632
Alma-Tadema, Miss L.: see Poetry Index
Alma-Tadema, Sir L., his Joseph, 2911
Almond, how it grows, 1966; pictures, 1972
Almond jumbles, how to make, 3285
Alphabet, curious things about it, 3390
 how it was formed, 678
 how to learn the alphabet, 245
 the child's new animal alphabet, 246
Alphonso XIII., king of Spain, 3360
Alpines, are mountain plants, 1928
Alps, the, 2959; among the snow-capped, 5669
 boring through the Alps, 6203
 pictures, 409, 2876, 2958
Alsace, given up to Germany, 2277
 taken by France, 2528
Altai Mountains, in Siberia, 3746, 3932
Aluminum, in U. S., 2660
 its specific gravity, 3816
Alva, Duke of, persecuted the Protestants of
 Holland, 124, 3460, 5171
Amadas, Philip, sea captain under Raleigh,
 6131
Amalgams, mixtures of mercury, 1869
Amanita, poisonous mushroom, 4753
Amaryllis, family of plants, 5272
Amazon ant, preys on other ants, 2948
Amazon River, picture, 4499; size, 4498
Amazons, queen's girdle fetched by Hercules,
 5164
 warlike women, 962
Ambato woman, grinding, picture, 4575
Amber, attracts things, 1421, 2113
 the beginning of electricity, 5253
Ambergris, got from the sperm-whale, 1086
Ambidextrous, its meaning, 5020
Ambrose, St., and Theodosius, picture, 3983
 his life, 3982
 wrote hymns, 1995
Amenhetep III., king of Egypt, 4160
Amenhetep IV., king of Egypt, a true thinker
 5795
Amenophis II., king of Egypt, 5823
Amenophis III., king of Egypt, 4976
America, animals unlike those of Europe, 13
 appearance of man in, 13
 colonisation in, 513
 disappearance of horse, 5570
 discovered by Columbus, 5506
 discovery celebrated, 3538

INDEX

America, earliest explorations in, 257
 early history, 9
 exploration of Arctic, 5212
 famous American writers, 1475
 how Columbus discovered it, with picture, 56,
 57
 how it got its name, 58
 Indians of, 14
 its first people, 4394
 land claimed by the various nations, 263, 886
 map, 8
 naming of, 258
 prehistoric, 11
 trees of, with pictures, 5437, 5621
**See also Battles, Canada, Central, North, and
 South America, Colonies, Explorations,
 Mexico, United States, Wars, and names
 of separate states and countries**
America, history of the song, 2956
American Temperance Society, formed, 3534
Amerinds, proposed name for American Indi-
 ans, 14
Amherst, Sir Jeffrey, in Canada, 540, 742, 884
Amherst pheasant, 1515; picture, 1516
Amiens, town of France, 2398
Ammonia, what it is, 1196, 1289, 1799
 why it cleans things, 2236
Ammon's temple at Karnak, pictures, in col-
 our, face 4786, 4791
Amoeba, life-story, 1004, 1101, 2456
 pictures, 1005, 1103
Amphibia, what they are, 661, 662, 2438
Amsterdam, built on islands, 3456; picture, 3454
 its trade, 204, 3462, 3464
Amu Daria River, 3932
Amundsen, Capt. Roald, discovery of South
 Pole, 5051
 pictures, 4725, 5052
Amur River, its length, 3752
Anaconda, snake, 1374; picture, 1377
Anacreon in Heaven, the tune of the Star
 Spangled Banner, 2956
Anæsthetics, drugs which make us unconscious
 of pain, 5752
Anaeze, a Bedouin tribe, 6029
Anagrams, 5002, 5114
Anatolius, St., wrote hymns, 1995
Anchises, father of Æneas, 5260
Anchor, its parts, 4565; pictures, 4566
Anchovies, sprats sold as, 206
Ancient lights, its meaning, 2329
Andalusia, province of Spain, 3353
Andersen, H. C., his dream of fairyland, pic-
 ture, 1469
 life, 1468; statue, 3598
 tale of the signboards, with picture, 5342
Anderson, Alexander: see Poetry Index
Andes Mountains, their extent, 4497, 4574;
 picture, 2730
André, John, life and death, with pictures, 3812
 monument to, picture, 3810
Andrea Dona, the, war-ship, 2898
Andree, S. A., tried to reach the Pole, 4726
Andrew, St., cross of, 1029
 flag of St. Andrew, 1029
 patron saint of Scotland, 1213
 said to have gone to Scythia, 2330
Andrew, St., of Crete, wrote a hymn, 1995
Androcles, and the lion, story, with picture,
 4704
Andromeda, set free, with picture, 1049
Andros, Sir Edmund, as governor, 525
Anemone, different kinds, 5270
 garden varieties, 5270
 in Canada, 2837, 2838
 rue, 2838
 star, 2839
 story about the anemone, 190
Aneroid barometer, 3946; picture, 3941
Angelica, description, 5038
 picture, 5035
Angelico, Fra, his life, 3987, 4948, 5812
 pictures of him, 3985
Angle, the different kinds, 446, 1923
 size of, 2672
Angle of incidence, what it is, 5177
Angler, and fish, fable, with picture, 3853
Angler fish, 210; picture, 208
Angles, inhabitants of England, 427, 430
Anglo-Saxon Chronicle, 432, 594
Anglo-Saxon remains, in British Museum, 428

Angola, Portuguese West Africa, 4262
Angora goat, 380
Anguish, king of Ireland, 3211
Animals, animal products of our country, 2657
 association of ideas, 4940
 believed in by our ancestors, pictures, 5925
 colour, 1776
 difference between animals and plants, 61, 168,
 256
 do not cry, 5383
 dream, 4444
 effect of high-pitched notes on, 4760
 exhibits of stuffed, with pictures, 4901
 extinct, in the earth's crust, 47, 169, 2887
 food, 2456, 3214, 2236
 fossil, picture, 18
 found in America, unknown in Europe, 13
 fur-bearing, 5152
 fur-bearing, with pictures, 4817
 how captured by primitive man, 6147
 how captured for the Zoo, 6150
 how they talk to each other, with pictures,
 5323
 length of life, 2327
 life of young, with pictures, 5477
 living in the sea, 1081
 marsupials, 5479
 most like men, 601
 names, 51
 parental instincts, 5134
 power of thinking, 160, 1366, 4698
 powers of speech, 1269, 1366
 sculptured, with picture, 4846, 4848
 sight, 153, 1367
 size, 2886
 skins that make the best leather, 6168
 strange dwelling-places, with pictures, 5411
 that feed and clothe us, 375
 that fly and burrow, 765
 that live on ants, 1000
 that prey upon man, 5723-5730
 that serve man, 269
 that work for Nature, 131
 the different classes, 659
 the story of the animals, 45, 49
 their feelings, 4598
 their instincts, 4549
 their use, 51
 their wonderful coats, 3407
 unknown, with pictures, 5567
 various, 5524
 warm and cold blooded, 546
 what animals are these? game, 2772, 2872
 why can baby animals walk sooner than
 human babies? 5574
 why they do not walk upright, 3836
Pictures of Animals
 how they came into the world, 49
 prehistoric remains, 48
 strange animals, in colour, face 48
 that carry their babies in pockets, 863
 that change their coats, 1777
 that lived before man, 44, 48
 that work for Nature, in colour, 137
 the animal ladder of life, 660
 the largest wild animals in Britain, 385
 various animals and birds, 2327
See also under Separate Names
Ankle, how it is formed, 2546
Annapolis, renamed, 881
Annapolis Royal, picture, 5602
Anne, empress of Russia, her reign, 3630
Anne, of Bohemia, 2852
Anne, of Denmark, wife of James I., 3596
Anne, of England, 5951
 her reign, 1029, 2535
Anne of Geierstein, story, 1494
Annie Laurie, the story of the song, 3741
Annual meadow grass, picture, 1341
Annuals, how to grow, 1350, 3398
 live one season: only, 233, 3734
Ant, and the grasshopper, fable, with picture,
 2141
 dove and the ant, fable, 189
 eggs of, really chrysalids, 5524
 how ants are protected, 780
 how to keep ants as pets, 3916
 in hot countries, 1002
 its sight, 4216, 5021, 5039
 pictures, 2941, 2945, 2949
 slave-making, 5792

INDEX

- Antarctic exploration:** see Polar exploration
Ant-eater, life-story, 1000; pictures, face 48 in colour, 1001
Antelope, how it is hunted, 140
 lives in Africa, 1766; picture, 381
 the different kinds, 382
Antietam: see Sharpsburg
Antigone, sacrificed her life, 468
Antigonus, received Macedonia, 5130
Antigua, exports pine-apples, 1877
Antioch, conquest by Barbarossa's army, 1590
 siege of, 1588
Antiochus, king of Syria, 117
Antiquary, The, story of the novel, 1649
Antiseptic, its meaning, 2100
Antivari, port on the Adriatic, 3224
Ant-lion, 3263; picture, 3259
Antonello, of Messina, 1256
Antonine, wall of, rampart, 533
Antoninus Pius, emperor of Rome, his reign, with picture, 533
Antony, Mark, at battle of Actium, 5709
 death of, 5710
 his story, 421, 527
 marries Octavia, 5708
 meeting with Cleopatra, 5708, 5709
Antony and Cleopatra, Shakespeare's play, 4792
Antrim, rope bridge, picture, 31
Antwerp, port, 3455; picture, 3454
Antwerp pigeon, picture, 2213
Aorta, artery of the body, 1583
Apatite, in Canada, 5600
Ape, and the wedge, 5421
 care of young, 5480
 different kinds, 601
 does not cry, 5383
 dwelling in trees, 5411
 pictures, 603
 story concerning, 5655
 teeth of, 2098
Apelles, painter, his birthplace, 4196
Apennines, mountains in Italy, 3012
Aphis, how the ant treats it, 3278
 how the ichneumon fly treats it, 3258
 how to treat it, 3278
 pictures, 2945, 2949
Apollo, wooed Marpessa, 1432
Apollo, Temple of, Phigalæa frieze, picture, 4159
Apollodorus, erected Trajan column, 5009
Apostles, may have come to England, 2330
Appetite, how it guides us, 3047, 3109
Apple, cut inside without peeling, 5449
 golden apples taken by Hercules, 5164
 how its fruit is made up, 1127, 4110
 how much water it contains, 1169
 new varieties of, 3486
 pictures, in colour, 649, 3735
 the rosy apple, a story, 5345
 when to gather apples, 4354
 where our apples come from, 641
 why does an apple turn brown if we bite it and put it aside, 5641
 why it falls to the ground, 303
Appiqué work, and pictures, 4996
Appomattox, scene of Gen'l Lee's surrender, with picture, 2022
 surrender at, 3536
Apprentice boy and his master's children, story, 3010
 the brave apprentice, story, with picture, 4333
April, how it got its name, with picture, 4517
Apteryx, pictures, face 48, 1431
 what kind of bird it is, 1428
Aqua regia, can melt gold, 1293
Aquarium, fresh-water, with picture, 4145
 salt-water, how to make, 4454
Aqueduct, Catskill, with pictures, 5115
Aquinas, Thomas, what he taught, 4618, portrait, 4625
Aquitaine, Eleanor, Duchess of, 2702
Arabia, desert of, 6029
 its history and geography, 3875
 pictures, 3873, 3879
 visit to, 5923
Arabian camel, 276; picture, 273
Arabis, plant, 5270
Arabs, breaking up of a camp, 6037
 conquered Palestine, 1585
 division of tribes, 6029
Arabs, food of, 3876
 fought for their religion, 3878
 invaded India, 1700
 invaded Italy, 3014
 settled in Africa, 280, 4251
 studied astronomy, 1656
 their great learning, 3878
 their horses, 6030
 their water jug, 6034
Aragon, province of Spain, 3353
Aral, Sea of, 3745, 3753
Aramaic, language spoken by Jesus, 1270
Arany, Hungarian poet, 5716
Arbela, battle of, 1306, 5065; picture, 5061
Arbitration, a method of settling differences, 3241
 of Venezuela Boundary dispute, 3538.
Arbor Day, for planting trees, 4469
Arbutus, John, sketch, 2331
Arbutus, trailing, description, 2336, 4487; picture, 4491
Arc, Joan of: see Joan of Arc
Arc de Triomphe, 5005; picture, 5012
Arcachon, oyster fishery, picture, 3773
Arcadia, kingdom of Arcas, 3314
Arcas, son of Jupiter, his life, 3314
Arch, stronger when narrow, 4600
 two kinds, and picture, 620
Archegosaurus, animal, picture, 44
Archæopteryx, first known bird, 47, 765
Archangel, port on White Sea, 3753
Archangel, the dead-nettle, 4290
Archer, constellation, picture, 2613
Archer, J. W., artist, 5620
Archimedes, discovered law of floating things, 3096
 experimented with metals, 1658
 portrait, 4625
Archipelago, sea with many islands, 3149
Architecture, a draftsman of English, 5618
Arc-lamps, their light, 658
Arcole, battle, won by Napoleon, 4361
Arcot, captured by the British, 1094, 1704
Arctic exploration: see Polar exploration
Arctic fox, 3410; picture, 3407
Arctic Ocean, islands in, 1920
Arcturus, star, 2612; pictures, 2611, 2613
Ardennes, hills in Belgium, 3455
Area, how to measure, 5248
Arcthusa, description, 3050
Argall, mountain sheep, 378
Argall, Samuel, expedition to Acadia, 539
Argentine, flag, picture in colour, 1640
 its soil, 3341
 state of South America, 4569
Argentine fox, 670
Argo, the, ship which carried Jason, 186
Argolis, its ancient name, 5004
Argon, contains other elements, 1295
 is made from radium, 1419
 why so called, 939
Argus, built a galley for Jason, 185
Argus, the dog of Odysseus, 4221
Aristæas, wrote on conics, 4618
Aristides the Just, picture, 5127
Aristotelians, philosophers, 1308
Aristotle, great philosopher, 1306
 his laws of arguing, 5758
 his mistake about falling weights, 304, 1659, 3551
 pictures, 1307, 4625
Arithmetic, adding numbers together, 1690, 1931
 how Fred and Charlie counted, 248, 489
 how numbers are divided, 3272, 3425
 how to learn the figures, 730
 how to multiply by ninety-nine, 579
 how to multiply figures, 2411, 2651, 2891, 3131
 how to subtract, 2172, 3290
 how we count from ten to ninety-nine, 970
 in rhyme, puzzles, 4351, 4458
 its relation to music, 4861
 numbers from ten to nineteen, 1210
Arizona, description of, 3590
 Indians of, 3683
 its deserts and forests, 3072, 6029
Ark, Noah's, said to have rested on Mount Ararat, 3873
Arkansas, admitted, 1828, 3535
 as slave-state, 2010
 its industries, 5986
 secedes, 2012, 3536

INDEX

Arles, where a council was held, 2330
Arm, bones, picture, 2543
 how it is formed, 2545
 how the arms give man power, 3566
 how the muscles work, 2627
 why we swing our arms, 2455
Armada, story of, 848; pictures, 849, 1941
Armadillo, life of, 1002; pictures, 44, 1000
Armenia, conquered by the Seljouks, 3878
 taken by Russia, 3880
Arminius: see Hermann
Armour, why it is not used now, 157
Arno, river of Italy, 3012
Arnold, Benedict, at Quebec, 743, 984
 at Saratoga, 988
 drives back Canadian army, 986
 treason of, 992, 3812
Arnold, Matthew: see Poetry Index
Arnold, Samuel J., wrote *The Death of Nelson*, 3740
Arnold, Sir Edwin: see Poetry Index
Arnolfo di Cambio, his life, 2780
Arpád, leader of the Magyars, 5712, 5714
Arras Cathedral, its tapestries, 4954
Arrian, wrote what Epictetus taught, 2911
Arrow, what makes it fly, 4545
Arrowhead, plant, 4962; pictures, 4960, 4961
Arrowroot, is mostly starch, 2926
Arsenic, in Canada, 5600
 in wall paper, 5575
 non-metallic element, 1294
Art, Archer, J. W., 5620
 famous makers of Rome, 4945
 how an artist thinks, 4943
 Irish, 5461
 new birth of art: see Renaissance
 painters of the United States, pictures, 4147
 Presstel, John, 5694
 twelve great painters, 757
 Twopeny, William, with pictures, 5618
 what it includes, 4159
Artabanus, Parthian king, 5066
Artaxerxes I., king of Persia, 5064
Artaxerxes II., king of Persia, 5076
Artaxerxes III., king of Persia, 5065
Artaxerxes (Ardashir), king of Persia, 5066
Artemis, Greek goddess of purity, 190
Artemisia, Queen, builds the Mausoleum, 5566
Arteries, 1579; picture, 1636
Arthur, eldest son of Henry VII., 842, 2708
Arthur, king of England, and Richmond Hill, 1983
 Geraint and Enid, 1976
 his fight with Sir Pellimore, 870
 pictures, face 867, 872
 rescues Amoret, 692
 Sir Tristram, 3211
 the coming of King Arthur, 867, 1680
 the founding of his kingdom, 869
 the passing of King Arthur, 3311
Arthur, Chester A., administration, 3537
 becomes president, 2417
 picture, 3532
Arthur's Chariot, the Great Bear, 3314
Articles of Confederation, convention for
 changing, 1389
 of the United States, 1388
Artificial fertiliser industry, 854
Arum, plant, how to treat it, 2564
Aryans, conquered part of India, 1699
As You Like It, story of, with picture, 629
Asama-yama, volcano of Japan, 370
Asbestos, in Canada, 5600
 why it does not burn, 916
Ascension, British island, 1876
Asgard, the home of gods, 3581
Ash, American, 5624
 pictures, 3186, 5623
 what kind of tree it is, 3186
Ashantees, warlike people in Africa, 1766
Ashes, what they are made of, 2506
Ashley, Lord, a proprietor of Carolina, 523
Ashur, god of Assyria, 4980
Ashur-bani-pal, called himself king of Assyria,
 5057
 his power, 4980
 killed his brother, 4982
 pictures, 4971, 4981
Ashur-nazir-pal, king of Assyria, portrait in
 stone, picture, 4981
Ashur-nazir-pal, remains of palace discovered,
 4977

Asia, history of south-western Asia, 3873
 its sandy deserts, 4122

See also under **Central Asia and
Names of Countries**

Asia Minor, conquered by the Arabs, 3876
 gained by Seljouk Turks, 3154
 invaded by the Seljouks, 3878
 part of Asiatic Turkey, 3873
 physical features and historical interest, 381
Asiatic Turkey: see Turkey in Asia
Askew, Anne, put to death, 5068
Asoka, great ruler in Hindustan, 1700
Aspen, tree, 4600
Ass, the ass in the lion's skin, fable, with
 picture, 3853
 two loaded asses, fable, with picture, 2141
Assaye, battle of, 4362
Assiniboia, organised, 1247
Assiout, picture, 6032
Association of ideas, how it works, 4939
 how to think, 5025
 in memory, 5029
 what it means, 4598
Assouan, dam across the Nile, 4260, 5818
Assyria, conquest by Babylonians, 5057
 pictures, 3097, 3399, 4971, 4973
 sculpture in, 4160
 story of its past, 4971
 war with Egypt, 4788, 4980
 writing on clay, 3863
Astbury, John, potter, his life, 4478
Aster, picture, 5184
 seaside, 5190
Astolat, Lily Maid of Astolat, story, 1185
Astrakhan, port of Russia, 3626, 3750
Astrology, study of the stars, 1940
Astronomers, story of, 1655
Astronomy, comets, meteors, and sky dust,
 2495
 the colour of the stars, 2715
 the making of other worlds, 2861
 the moon, the lamp of night, 2219
 the stars as we see them, 2609
 the sun's family of worlds, 2423
 the wonder of the sun, 2081
 the wonder of time and tide, 2279
 what it tells us, 1655
 worlds in the skies, 1939

See also **Earth, Child's Story of the**

Astyages, king of Media, 5057
Athara, river in Egypt, 4260
Athabasca, organised, 1247
Athanasius, St., his life, with portrait, 3981
Athene, goddess, aided Perseus, 1049
 her temple, 5128
 picture, 4617
 statue in the Parthenon, 5125
 statues on the Acropolis, 5128
 worshipped at the Parthenon, 3220
Athenodorus, made the Laocoon, 4166
Athens, chief Ionian state, 5124
 city of Greece, her power, 1302
 influence on the world, 5126
 its history, 5128
 its temples and sculptures, 5128
 Lysicrates temple, 5004
 pictures, 3218, 5008
 sacked by the Persians, 5064
 the capital of Greece, 3150, 3220
Atkinson, Dr., finds bodies on Scott Expedi-
 tion, 5054
Atlanta, Ga., 5984; pictures, 5990
Atlantic cable, how it was laid, 2476
 how men tell where it is broken, 4550
Atlantic Ocean, bottom of, picture, 4556
Atlas, picture, 4437
 supposed to hold up the world, 4518
Atlas Mountains, in north of Africa, 4263
Atmospheric pressure, what it is, 3941
Atoms, are like living creatures, 4601
 discovered by John Dalton, 1372, 1666
 how atoms mix, picture, 1041
 how they affect elements, 1193
 made up of electrons, 1004, 5254
 the world inside an atom, 1553
 what they are, 1041, 1419
Attar of roses, made in Bulgaria, 3222
Attica, division of Greece, 3150, 5124

Attila, defeated in Germany, 2522, 3933
 leader of Huns, driven out of Gaul, 2317
Attraction, the power by which the earth holds us to itself, 1062

Auber, Harriet, wrote a hymn, 1998
Aubrietia, how to treat the seeds, 1074
Auckland, province of New Zealand, 1462
Auden, Henry William, of Upper Canada College, portrait, 5235
Additives, people who think by sound, 4944
Augean stables, cleansed by Hercules, 5163
Augsburg, city of Germany, 2754
August, how it got its name, 4519
Augustan Age, name given to Anne's reign, 2540

what it means, 528, 5266
Augustine, St., came to England, 428, 2329, 4708
 pictures, 429, 4710
Augustus, Octavius Cæsar, defeated Cleopatra, 5003, 5709
 defeats Mark Antony, 5709
 first Roman emperor, 421
 gave name to month August, 4519, 4533
 his great power, 5266
 his rule, 527
 mourned over the Roman army, 2522
 pictures, 528, 4519, 5259, 5803
 what he did for Rome, 5812

Auk, different kinds, 1630
Auld Robin Gray, song, with picture, 3739
Aunt Sally, garden game, 1072
Auricle, chamber of the heart, 1582
Auricula, in the garden, 5271
 kind of primrose, 2042, 5271
Aurora, goddess, Reni's picture, 4589
Aurora borealis, its electrons, 5252; picture, 3856

what it is, 5251
 why it appears in the north, 5252
Aurangzeb, king of India, 1702; portrait, 1699
Austen, Jane, at her desk, picture, 2591
 her life, with portrait, 2593
Austerlitz, battle of, 2276, 2530, 3631
 town in Bohemia, 2576
Austin, Alfred: see Poetry Index
Australasia, what it consists of, 1466
Australia, animals, 378, 384, 1356, 1364
 conquest of "Mallee country," pictures, 5765
 flag of, picture in colour, 1640
 food cost, 5770
 its desert, 6023
 its products, 1358, 1364
 letter from, 5767
 life in, to-day, pictures, 5765
 map of, 1355
 natives of, 4039
 part of a continent, 3004
 pictures, 352, 355, 1357, 1359, 5769, 5771, 5773
 pioneer work in, 5765
 plant, bird and animal life, 5770
 population, 1364
 rabbits in, 5767, 5770
 railways, 1360
 taken possession of, 4038
 the great south land, 1355
 the men who found Australia, 353
 tools used in "Mallee country," pictures, 5768

See also Southern and Western Australia
 and Names of Countries

Australian Alps, 1358
Australian bear, 862
Austria, flag, 1640; picture in colour, 1640
 house of Hapsburg founded, 2527
 how governed, 5712
 invaded by Napoleon, 2274, 2530
 its climate, 2858
 its different parts, 2576
 joined Prussia against Denmark, 2578
 lost Silesia, 2530
 relations with Bosnia, 3224
 the empire of many races, 2851
 trade with Servia, 3222
 Turks driven out, 3158
 union with Hungary, 2856
 union with the Tyrol, 2854
Austria-Hungary: see Austria & Hungary
Austrian Tyrol: see Tyrol

Austrians, at war with the Swiss, 2964
 driven out of Italy, 3021
 made slaves, 2528
Automobiles, perfecting of, 2670
 what makes them move, with picture, 1771
 why they have numbers, 1576

See also Motor-cars

Anvergne Mountains, once volcanic, 2392
Avalanche, how it crashes down, picture, 2514
 how it is formed, 3228
Avebury, Lord, experimented with ants, 2493
 2947
 experimented with hearing of insects, 5021
 studied bees, 780, 4216
 what he said of ants, 4216
Avens, seed, picture, 3833
Avignon, its palace of the popes, 2398
Avocet, bird, 1953; picture, 1959
Avon, Bristol, its suspension bridge, 20
Axe, its use, with picture, 337
Aybeck, a Mameluke captain, 2912
Aye-aye, kind of lemur, with picture, 607
Aylesbury duck, 1520
Azaleas, American, 4487
 how to treat, 579, 2254; pictures, 4493
Azote, old name for nitrogen, 3342
Azotobacter, microbe in the soil, 3342
Azov, town, 3158, 3631
Azov, Sea of, in Russia, 3623
Aztecs, American tribe, 4382, 4384
 conquered by Cortez, 260

B

B. C., what it means, 192
Babar, founder of Mogul Empire, 1702
 portrait, 3931
Babel, Tower of, its destruction, 4983
 where it was, 3875
Babes in the Wood, story, picture, 1523, 5056
Babington, Anthony, his plot, 3088
Baboon, 607; care of young, 5480
 how captured, 6152
 intelligence and communication, 5323
 picture, 603
Baby, why it cannot stand upright, 3836
 why it cannot talk when born, 2873
 why it requires so much sleep, 3379
Babylon, buried city, 5998, 5100
 capital of Babylonia, 4974
 city, picture, 4975
 entry of Alexander the Great, picture, 1303
 hanging gardens, picture, 4983
 its buildings, 4983
 taken by Alexander the Great, 5065
 taken by the Persians, 4984, 5053
Babylonia, brickmaking and agriculture, 4976
 building of cities, 4976
 conquest by Assyria, 4977
 links between old and new empires, 4984
 name adopted, 4974
 new empire founded, 4983, 5057
 return of the Jews, 5053
 story of its past, 4971
 under the Medes, 4983
 writing of the Babylonians, 3399, 3863
Babyroussa, picture, 383; wild pig, 384
Baccaria, his discovery in electricity, 2118
Bacchus, spirit of the vine, 556
Bach, Johann Sebastian, musician, his life, 3244;
 pictures, 3243, 3247
Bachelor's button: see Cornflower
Backbone, animals with a, 661
 animals without a backbone, 659
 how it is made, 664, 2440, 2455
 pictures, 664, 2441
Bacon, Lord, title did not exist, 5524
Bacon, Francis, believed in astrology, 1940
 portrait, 4625
 what he taught, 4618
Bacon, Mrs. J. D. D., sketch of work, 2050
Bacon, Roger, his life, 3986; portrait, 4625
 wrote an encyclopædia, 600
Bacon's Rebellion, in Virginia, 525
Bactrian camel, 276; picture, 273
Baden, grand-duchy of Germany, 2754
Baden-Powell, General, and Boy-Scouts, 3584
Badger, dwelling, 5414
 picture, 137

INDEX

Badger, what kind of animal it is, 142
winter sleep of, 6297
Baeda: see Bede, the Venerable
Baffin, William, Arctic explorer, 4722
Bag, brush-and-comb bag, with picture, 232
how to make, with pictures, 2569
needlework, 5665
why a bursting bag makes a noise, 3095
Baghdad, caliphs, 3378
destroyed by the Mongols, 3373
pictures, 811, 3877
Baglers, party in Norway, 3594
Bagot, Sir Charles, governor of Canada, and death, 1240
Bagpipes, why they make music, 3096
Bahama Islands, 1876
Baikal Lake, in Siberia, 3752
Bailey, E. H., made Nelson statue, 1166, 5004
Bailey, Philip James: see Poetry Index
Baillie, George, married Grizel Hume, 5618
Baillie, Johanna: see Poetry Index
Baillie, Robert, a covenantor, 5615
Bainbridge, William, commander of the Constitution, 2902
commander of the Philadelphia, 2899, 2900
Baird, Thomas, first American shoemaker, 3101
Baker, Lady, worked with her husband, 4445
portrait, 4445
Baker, Sir B., designed Forth Bridge, 20
Baker, Sir Samuel, discovered Lake Albert Nyanza, 284
his work for slaves, with picture, 4445
Baker, W. E., an inventor, 1624
Baku, port of Russia, 3630, 3752
Bala, town in Wales, 2549
Bala Lake, picture, 2549
Balaclava, battle of, 1098, 3632
Balance, feats of, 5659
its control, 1868, 2232, 3954
nerves of sense of balance, 3954
See also Equilibrium
Balboa, Vasco Nuñez de, explorer, 4502
on Isthmus of Panama, 258
portrait, 261
Balder, King, his burial, 3417
Baldness, its cause, 2074
Baldwin I., emperor of Constantinople, 3154
Baldwin I., king of Jerusalem, 1587, 1588
Baldwin II., king of Jerusalem, 1589
Baldwin III., king of Jerusalem, 1589
Baleares Islands, east of Spain, 3354
Baleen whale, life-story, with picture, 1082
Balfe, Michael, composer, 3252, 3743
Balkan Mountains, 3149
Balkan Peninsula, its countries, 3219
its history, 3150
natives, pictures, 3225
the rise and decline of Turkey, 3149
why its states never united, 3149
Ball, games for the garden, 1614
how to make a ball of many colours, with pictures, 1197
in the hollow post, 5344
its bounce, 1133; with picture, 5015
the ball that answers questions, trick, with picture, 581
why it falls when thrown, 3470
why it moves forward when thrown, 1983
why playing it is good for children, 4511
Ball, Dr., and the baboon, 607
Ball, Sir Robert, earth's distance from the sun, 2083
what he said about the moon, 2220, 2224
what he said of stars, 1943
what he said of the Orion nebula, 2866
Ball, Thomas, sculpture of, 4844
Ball bearings, what they are, 684, 4601
Ballad, story in verse, 97, 825
Balliol, John, king of Scotland, 118
Balloon, cannot go above the air, 1577, 3863
description of first, 5788, 6081
how heat makes it expand, pictures, 4369
how it keeps up, 912
how it sails in the sky, pictures, 396
how to make a hot-air balloon, with pictures, 3517
what we should see from a balloon still in the sky, 3234
why a balloon sails, 161
why it rises, 3816

Balloon breaking, game, with picture, 4242
Ballybunion, single-rail railway, 91
Balsam, picture, 4838
Baltic, battle: see Copenhagen, battle of
Baltic, steamer, saved the Republic, 3524
Baltic Sea, is becoming less salt, 204
joined to the North Sea, 2750
the Mediterranean of the north, 3591
why it freezes, 3600
Baltimore, Lord, founder of Maryland, 520
portrait, 519
Baluchistan, state, 3873
Bamboo, a grass, 1332
Ban, king of Gaul, helped King Arthur, 869
Banana, where it grows, with pictures in colour, 642, 644
picture, 2183
Banded adder, called the king snake, 1378
Banded paracirrhites, picture in colour, face 200
Banded sea-snake, picture, 1379
Bandicoot, its life-story, with picture, 864
Baneberry, varieties in Canada, 2840
Banff, picture, 221
Bank of England crossing-sweeper, story, 1796
Banks, Gen'l, driven across Potomac, 2016
Banks, George L.: see Poetry Index
Banks, Sir Joseph, on the steamboat, 2470
Banks, at Chicago, picture, 5517
United States Bank, 1823
Bank-vole, destructive animal, 772
Bannockburn, battle of, 748, 3084
Barbadoes earth, what it is, 2340
Barbados, island of West Indies, 1878
Barbarossa: see Frederic Barbarossa
Barbary ape, 608; picture, 605
Barbary falcon, 1846
Barbary States, states of Africa, 4260
Barbault, Anna: see Poetry Index
Barbel, fish, 2681; picture, 2679
Barberry, description, 4492
fruits, picture, 4489
Barcelona, port of Spain, 3353, 3361
scene in a street, picture, 3351
Barclay, Capt., commander English fleet, 746,
at Battle of Lake Erie, 4279
Barclay, poet of long ago, 469
Barents, William, his explorations, 4722
Barents Land, named after discoverer, 4722
Baring-Gould, Sabine, poems: see Poetry Index
wrote hymns, 2000
Bark, uses of, 5628
what it does for the tree, 917
Barley, its value as food, 2926; picture, 2923
used in alcohol, 1872
Barley grasses, pictures, 1337, 1339
Barley sugar, how to make it, 3512
Barlowe, Arthur, sea captain under Raleigh, 6131
Barmen, mono-rail, picture, 91
Barnaby Rudge, story of the novel, with pictures, 2761
Barnacle goose, 1522; picture, 1519
Barnard, George Gray, sculpture of, with pictures, 4848, 4849
Barn-door cock, how to make, with pictures, 933
Barney, Commodore, visited by Jerome Bonaparte, 4908
Barometer, how it measures mountains, with pictures, 3945, 3946
how to make a floral, 3922
how to make chemical weather-glass, 4354
how to make, with pictures, 2969
made at home, with picture, 5447
one a boy can make, with pictures, 2129
what it does, 3944
what it is, 776
Barque, what it is like, 3915; picture, 3914
Barquentine, 3915; picture, 3914
Barr, Amelia, picture, 2043
Barr, Matthias: see Poetry Index
Barra, Joseph, who died for the Republic, 5512
Barras, Comte de, member of French Directory, 4356
Barren brome, picture, 1337
Barren Lands, description, 1918, 3783
Barrie, J. M., his story, Peter Pan, with pictures, 2843
his writings, 1474
portrait, 2843
Barrows, old grave-mounds, 194

INDEX

- Barry, St. Bernard dog, story of, 6270**
Barry, Sir Charles, architect, his life, 1164
Barry Cornwall: see Cornwall, Barry
Bartholomew, St., visited Asia, 2330
Bartlett, Paul Wayland, sculpture of, with picture, 4843, 4848
Bartlett, Robert A., commander of the Roosevelt, 5212
Bartolommeo, Fra, Florentine artist, 2790
 painted a portrait of Savonarola, 3990
Bartsia, red, picture, 5188
Bartoluccio, Ghiberti's stepfather, 2782
Basalt, what it is like, 5198
Basel, makes silk goods, 2968
Baseball, the game, 5287
Bases: see Alkalies
Basil II., Byzantine emperor, 3154
Basilica, The, at Treves, 2754
Basilisk, crested lizard, 1219
Basket, fern-basket for a nickel, 5665
 from willows, with pictures, 395
 making hamper, with pictures, 2131
 of raffia, 5456
Basking shark, 2443; picture, 2445
Bass, will live in an aquarium, 4457
Bass, George, explored Australia, 355
Bass Rock, Firth of Forth, gannets, 1632
 foghorn, picture, 4428
Bass Straits, Tasmania, 1356
Basswood, flowers of, 2835
Baste the bear, garden game, 1072
Bastille, prison in Paris, 2072
Basutos, tribe, 1766; picture, 1764
Bat, 158, 765, 3540
 pictures, 51, 767
 winter sleep of, 6297
Bat, mysterious Chinese cricket-bat, trick, with picture, 1613
Batavia, city of Java, 3462
Batavian Republic, formed, 3463
Batavians, tribe of the Netherlands, 3457
Bates, David: see Poetry Index
Bath, buried city found, 5100
 the baths of Bath, tale, 1108
 was a Roman city, 198
Bathing, rules about bathing, 3820
Bathing-gown, how to make, with picture, 3921
Bathurst, Benjamin, story of his disappearance, and picture, 1112
Bathurst burr, and seed, pictures, 3833
Batoum, port on Black Sea, 3752
Battery, the, history of, with pictures, 4305
Battle Hymn of the Republic, history of the song, 2956
Battle of the Nations, 2576, 4364
Battle of the Standard, 594, 3080
Battles, Bennington, 988
 Brandywine, 988
 Buena Vista, 1832
 Bull Run, 2013, 2016
 Bunker Hill, 984
 Cerro Gordo, 1832
 Chancellorsville, 2016
 Chapultepec, 1832
 Chickamauga, 2013
 Chippewa, 746, 1399
 Churubusco, 1832
 Cold Harbour, 2019
 Concord, 983
 Contreras, 1832
 Corinth, 2016
 Cowpens, 992
 Fair Oaks, 2016
 Five Forks, 2022
 Fort Donelson, 2013
 Fort Duquesne, 884, 885
 Fort Fisher, 2019
 Fort Frontenac, 885
 Fort Henry, 2013
 Fort Niagara, 885
 Fort Sumter, 2012
 Fredericksburg, 2016
 Fort Ticonderoga, 984, 1820
 Germantown, 983
 Gettysburg, 2016
 Great Meadows, 882
 Harlem Heights, 986
 Hatteras Inlet, 2014
 Island No. 10, 2013
 King's Mountain, 991, 1822
 Lake Champlain, 538
Battles, Lexington, 983
 Long Island, 988
 Lookout Mountain, 2018
 Louisville, 881, 884
 Lundy's Lane, 746, 1399
 Missionary Ridge, 2018
 Mobile, 2019
 Monterey, 1832
 Moore's Creek, 986
 Moraviantown, 746
 New Orleans, 1400, 2014
 Palo Alto, 1832
 Perryville, 2016
 Petersburg, 2020, 2022
 Pittsburg Landing, 2013
 Plattsburg, 746
 Port Royal, S. C., 2014
 Quebec, 540, 743, 880, 885, 984
 Resaca de la Palma, 1832
 Saratoga, 988
 Seven Days, 2016
 Seven Pines, 2016
 Sharpsburg (Antietam), 2016
 Shiloh, 2013
 Three Rivers, 743
 Ticonderoga, 264, 885
 Trenton, 986
 Vera Cruz, 1832
 Vicksburg, 2016
 Waterloo, 5362
 White Plains, 986
 Wilderness, 2019
Battles (naval), Actium, off Greece, 5709
 Bon Homme Richard and Serapis, 2893
 Bon Homme Richard and the Countess o
 Scarborough, 2893
 Chesapeake and Shannon, 1399, 2902
 Constellation and La Vengeance, 2900
 Constellation and L'Insurgent, 2900
 Constitution and Java, 1398, 2902
 Constitution and La Guerrière, 1398, 2901
 Enterprise and Boxer, 2902
 Essex and Alert, 1398
 French and English in St. Lawrence, 538
 Hornet and Peacock, 1398, 2902
 Lake Champlain, battle of, 2902
 Lake Erie, battle of, 1399, 2902, 4279
 Manila Bay, battle of, 2184
 Merrimac and Monitor, with picture, 2014
 Ranger and the Drake, 2898
 Revenge and Spanish fleet, 5395
 Santiago, Cuba, 2188
 United States and Macedonian, 1398
 Wasp and Frolic, 1398, 2902
Battledore, how to mend, 4249
Battledore and shuttlecock, game, 3516
Battleship, pictures, 6235-6244
 the U. S. S. Utah, picture, 6162
Bavaria, state of Germany, 2576
Baxter, Richard: see Poetry Index
Bay, nests of, 5784
Bayard, Chevalier de, death, picture, 129
 his life, 128
Bayberry, picture, 5189
Bayeux, its famous tapestry, 592, 2498
Bayly, Thomas Haynes, song-writer, his life 3740; portrait, 3737
Bazaine, Marshal, picture, 4385
Beach, games to play on, with pictures, 5528
 sand builders, pictures, 1415
Beachy Head lighthouse, how it was built, with pictures, 738
Beaconsfield, Earl of, as prime minister, 2388; pictures, 2379, 2383, 6221
Bead, what to do with beads, with picture, 2033
Bead belt, how to make, with picture, 2868
Bead loom, how to make, with picture, 2869
Beach grass, picture, 1334
Beadlet, see anemone, 4454
 picture in colour, face 2335
Beagle, ship, Darwin's voyage, 856
Beaked Chetodon, picture in colour, face 200
Beam, of a ship, 4565
Bean, wild: see Ground-nut, 2841
Bean Setting, dance, with pictures, 2765
Bear, brown, 138
 clawed the chipmunk, 1068
 how the bear lost his tail, 1063
 in the well, story, in colour, 4934
 pictures, 51, 138, 4729
 polar bear, 1090, 4729, 5524

INDEX

- Bear**, the three bears, story, with pictures, 1187
various kinds, 141
winter sleep of, 6296
- Bearberry**, 5193, picture, 5189
- Bear Tamer**, the, picture of, 4843
statue, 4848
- Bear-weed**: see skunk cabbage
- Beard, Dan**, organised boys' society, 3583
- Bearded vulture**, picture, 1841
- Bearing rein**, use, with picture, 158, 159
- Beat**, in sound, 4918
- Beatrice, Dona**, in Mexican legend, 5231
- Beatrice**, who died for her religion, 964
- Beaufort, Margaret**, Henry VII.'s mother, 841
- Beauharnais, Josephine**, Napoleon's wife, 4356
- Beaune, Captain**, at the battle of Ft. Duquesne, 884
- Beaumont, Francis**, poet, 3330
- Beaugard, Gen.**, at Bull Run, 2013
attacks Fort Sumter, 2012
succeeds to Johnston's command, 2013
- Beauty**, can we make ourselves beautiful, 5381
what it is, 1993
- Beauty and the Beast**, story, with pictures, 2735
- Beaux, Cecilia**, an artist, 4152
- Beaver**, description, 4818
dwelling, 5413
how it is hunted, 2732
its life-story, 665
pictures, 51, 675, 2732
play of young, 5480
skin used for measuring, 5150
- Bechuanaland**, in South Africa, 1768
- Becker, Charlotta**: see Poetry Index
- Becket, Gilbert a**, legend about him, 5757
- Becket, Thomas a**, murder, 594, 2704 4713
pictures, 595
story of his father and mother, 5757
- Bequerel, Antoine Henri**, physicist, 640
- Bed**, damp, why it is dangerous, 3378
- Bede, The Venerable**, 430, 4709
how he translated the Gospel of St. John, 4336; picture, 4335
- Bedford, John, Duke of**, 120
- Bedivere, Sir**, knight of King Arthur, 3312
- Bedouins**, how they arrange their camps, 6030
meaning of the word, 6030
pictures, 3879, 6028, 6029
their courtesy to visitors, 6030
their religion, 6037
what their tents are made of, 6030
- Bee**, can distinguish colours, 4216
compared with the ant, 2941
how it carries pollen, 45
its brain, 3563
its humming, 909
its life-story, with pictures, 2815
its sting, 780, 3974
pictures, 51, 2326
- Beech-drops**, description, 3053; false, 3053
- Beech-tree**, description, 2836, 5446
picture, 3181
- Beef**, its value compared with cheese, 2793
production in U. S., 2658
- Beefsteak**, mushroom, 4754
- Beef-tea**, its value as food, 3113
- Beet**, cultivation for sugar, 693
how to sow, 3176
how to treat and store it, 4353
making it into sugar, pictures, 694
plantation of beets, picture, 693
- Beethoven, Ludwig von**, his life, 3249; pictures, 3243, 3251
his music, 1367, 3133, 3958
- Beetle**, foe of the rubber-tree, 5677
its wonderful eye, 3260
pictures, face 3140; in colour, 3411
that causes the death-tick, 3142
why we fear it, 4233
- Beetroot**: see Beet
- Begbie, Harold**, poems: see Poetry Index
- Beggars, The**, who they were, 3460
- Begonia**, how to treat, 3398
- Behistun**, inscription on rock, 4972, 5060
- Behring, or Bering, Vitus**, explorer, 3630, 4722
visited Pacific coast, 2178
voyages of, 4041
- Behring Straits**, 3630
- Bel**, temple of, picture, 4975
- Belcher, Sir Edward**, picture, 4725
- Belfort**, town in France, 2396
- Belgæ**, Keltic tribe, 3457
- Belgium**, became a kingdom, 3464
flag, picture in colour, face 1640
its history, 3455
its towns and industries, 3464
map, 3463
- Belgrade**, capital of Servia, 3222, 3224
picture, 3218
- Belin, Monsieur**, slave's devotion, 1914
- Belisarius**, Roman commander, 2912, 3152
with his guide, picture, 3153
- Bélit**, god of Assyria, 4980
- Bell**, electric, how to fit, 2567
how to model it, 6061
- Bell**, name the Brontës wrote under, 2598
- Bell, Graham**, patented a telephone, 4317
- Bell, Henry**, and the steamboat, 2470
his steamboat, the Comet, picture, 2469
portrait, 2467
- Bell, John**, nominated for presidency, 2010
- Bell, John**, work on Albert Memorial, 5004
- Bell-bird**, its call, 1748; picture, 1736
- Bellflower**, 2042, 4112
- Bell Rock lighthouse**, 738
- Bell the cat**, fable, and picture, 463
- Belladonna lily**, 5272
- Bellini, Vincenzo**, composer, 3252
- Bellini family**, artists, 1256
- Beloochis**, tribe, picture, 3939
- Belshazzar**, king of Babylon, his feast, 4984
- Beluga**, name for the white whale, 1088
- Ben Hur**, story of the book, with picture, 5225
- Benares, king of**, and his ministers, story, and picture, 4927
- Benedict, St.**, his life, and picture, 1012
- Bengal**, how it became British, 1704, 4037
- Bengal, Nawab of**, conquered by British, 4037
- Benjamin, Judah P.**, 6226, picture, 6223
- Bennett, William Cox**: see Poetry Index
- Bennington**, battle of, 988
- Bent grass**, pictures, 2980
- Bentham, Jeremy**, life and aims, 4098, 4100; portrait, 4097
- Bentivoglio, Cardinal**, a patron of art, 4956
- Benue**, tributary of the Niger, 4254
- Benzine**, its many compounds, 1873
takes grease out of material, 4456
- Benzoline**, inflammable liquid, 1280
- Beranger, Pierre de**: see Poetry Index
- Berengaria**, queen of Castile, 4717
- Bergen**, fish-market of Norway, 3602
- Bering, Vitus**: see Behring
- Berkeley, George**, portrait, 4625
what he taught, 4621
- Berkeley, Lord**, a proprietor of New Jersey, 521
- Berkeley, Sir William**, as governor, 525
- Berlin**, capital of Germany, 2578
picture, 2746
what kind of city it is, 2579, 2747
- Berlin, Treaty of**, signed, 3222
- Bermudas**, British islands, 1878
- Bernadotte**, Swedish royal family, 3598
- Bernard of Clairvaux, St.**, and the Second Crusade, 1589
his life, 3984; pictures, 3981, 3989
wrote hymns, 1995
- Bernardine nun**, digging, picture, 2395
- Berne**, capital of Switzerland, 2962, 2964
picture, 2963
- Bernhardt, Sarah**, acts for moving pictures, 5086
picture as Queen Elizabeth, 5092
- Bernini, Giovanni Lorenzo**, sculptor, 4161
- Berries**, new varieties, 3485
- Bertalda**, in story of a water nymph, 5519
- Bertha and Undine**, story, 4005
- Bessemer, Sir Henry**, invented converter, 5540
- Betrothed, The**, story of the novel, 1493
- Bevel**, use, with picture, 1923
- Bible**, contains the finest English writing, 2330
translated into German, 2527
- Bicarbonate of lime**, 1589, 5250
- Biceps**, arm muscle, 2626; picture, 2627
- Bichromate battery**, with picture, 1076
- Biconcave**, what it means, 1384
- Bicycle**, how it moves without pedalling, 89
how to clean it, 4456
how to mend a puncture, 4249
the first cycle, picture, 6109

INDEX

Bicycle, why it keeps upright, 2878
Biddenden maids, legend, 4277
Bienne, Lake, in Switzerland, 2960
Biennial, what it is, 719, 3734
Bierstadt, Albert, his "Yosemite Valley," 4149
Big Ben, of Westminster, story of, and picture, 1536, 1540
Bight, a coil in a rope, 235
Bilberry, 4839; picture, 4836
Bile, substance in the body, 2345, 2346
Bilge, of a ship, 4564
Bill of Rights, passed, 1029
Billion, a number, 782
Bingo, game, 2572
Biology, the study of life, 2504
Birch, pictures, 3182
 catkins of, 2835
 spray of, with picture, 5444, 5446
Birchlegs, party in Norway, 3594
Bird of Paradise, 53, 1738; pictures, 1741
Bird-eating spider, 3303; picture, 3301
Bird-girl, with golden wings, story, 1796
Birds, a Christmas-tree for birds, 2251
 are warm-blooded, 545
 bird which has the longest tail, picture, 6166
 birds used to have teeth, 1963, 2098
 build their nests by instinct, 914
 cedar-birds, 5437
 courting-habits, 1518
 do they talk? 5792
 eggs, in colour, 1744
 familiar bird friends, 2209
 flying, 508
 homes of, description, pictures, 5777
 how long they live, 2328
 how they find their way, 511
 how they fly, 1423, 2674, 3540
 how they protect themselves, 1737
 how to make a bird museum, 4668
 landbirds of Canada, 3037, 3488
 nesting-boxes for, with pictures, 5351
 nests, pictures of, 5780, 5781, 5785, 5786
 of beauty, 1737, 1739, 1741-43
 of long ago, 47, 3680
 of the ocean, 1625
 that are shot for sport, 1517
 that cannot fly, 1423
 that forgot how to fly, 1425
 that hunt, 1839
 that hunt in the sea, 1627, 1629, 1631
 that live on inland waters, 1521
 that run, swim, or climb, 1431
 that serve us, 1513
 that swim and climb, 1951
 the singing birds, 2051
 their ears, 155
 their eggs, 1780
 their eyes, 4217
 their origin, 46, 663
 their wonderful colours, in colour, 1741
 why does a bird forsake its nest if its eggs
 are touched? 5575
 why they do not fall, 916, 3955

Pictures of Birds

singing, 2053, 2055, 2059
 what wakes them up, 3435
 why caged birds' claws are cut, 5168
 why they cannot fly if dropped from a height,
 3237
 why they cast their feathers, 2322
Birdseye view, what it is, 62; picture, 63
Birgus latro, a crab, 2586
Birkenhead, the men of the Birkenhead, story,
 with picture, 1802, 1804
Birmingham, manufactures, 1029
Birs Nimroud, mound, 4983; picture, 4984
Birthing, what it means, 3763
Bishop, Sir Henry, composed songs, 3741
Bishop, The, rock, picture, 1058
Bishop's Cap: see Miterwort
Bismarck, Prince von, and Germany's African
 colonies, 2756
 his fall from power, 2748
 his policy, 2579
 his statue in Berlin, 2748
 pictures, 2577, 2756
Bismarck Archipelago, 2756
Bismarck Island, houses, picture, 1465

Bison, wild animal, 269
Bites, how to treat bites, 3397
Biton and Cleobis, story, 1301, 2301
Bitter almond, its uses, 1966
Bitterling, fish, 2681
Bittern, bird, 1954; picture, 1953
Bitter-sweet, berries, 4493
 description, 4495
Bitter-sweet (woody nightshade), description,
 4289
 picture, 4286
Bivalve, has a shell in two halves, 2588
Biwa, Lake, in Japan, 372
Bizet, Georges, composed Carmen, 3252
Black, colour, how to make, 1935
 why white clothing is cooler than black, 434
Black-backed gull, 1628; picture, 1629
Blackbeard, a pirate, 523
Black-beetle, name of the cockroach, 3141
Blackberry, pictures, 651, 3895
Blackbird, 2060, 2328
 eggs, pictures, in colour, 1744; 3894
 nests of, 5778
 varieties in Canada, 3042
 with young birds, picture, 2055
Blackboard, how to make, 5530
Blackcap, bird, 2054
 egg, picture in colour, 1744
 pictures, 2053
Black-cock, 1518; picture, 1517
Black currant, picture, 651
Black Death: see Plague
Black Diamond, story, and picture, 3579
Black Dwarf, The, story of the novel, 1495
Blackfeet, Indian tribe, 5152
Black Forest, 2754; picture, 2751
Black-game: see Black-cock
Black-headed gull, 1628; picture, 1629
Black-headed nun, bird, 1748
Black people, reason for their colour, 42
Blackpool, sea-wall, picture, 4432
Black Prince: see Edward
Black rat, 771
Black saltwort: see Sea milkwort
Black Sea, 3149, 3631
Black swans, picture, 1521
Black tern, picture, 1629
Blackthorn, 3450, 4110
 picture, 3450
Blackthorn, garden game, 1072
Blackwall hitch, and picture, 3283
Bladdernut, picture, 4835
Blair, Frank P., sent by Lincoln to offer com-
 mand to Lee, 4468
Blake, Robert, admiral, 1028, 1892, 3463
Blake, William: see Poetry Index
Blakelock, Ralph A., art of, 4152
Blanc, Mont, peak of the Alps, 2392, 2959
Blanco, Cape, in West Africa, 4262
Blank verse, has no rhyme, 94
Blarney stone, kissing the, 5467
Blashfield, E. H., an artist, 4152
Blaxland, crossed the Blue Mountains, 355
Bleak, fish, 2682; picture, 2683
Bleak House, story of the novel, 2433
Bleeding, how to stop, 1581, 5110
"Bleeding Kansas", nickname of Kansas, 3536
Blenheim, battle of, 565, 2530, 2540
Blenny, fish, 1411
Blériot, flies from Calais to Dover, 6082, 6086
Blewett, Jean: see Poetry Index
Blind, the, blind man's touch, 5486
 Helen Keller, 5285
 reading invented for, 1982
 their hearing, 3863
"Blind alley" occupations, 6165
Blindman's breakfast, game, 5000
Blindman's buff, game, 2571
Blindman's stab, game, 5000
Blind partners, game, 5000
Blind-worm, belongs to the skinks, 1219
Blite, sea, picture, 5192
Blockade of Confederate ports, very effective,
 2013
Blois, Count of, 2478
Blomidon, Cape, picture, 5606
Blood, blood-vessels, picture, 1445
 discovery of circulation by Harvey, 6092
 how it becomes impure, 1788
 how it circulates, 1580, 4183, 6091
 how it gets strength from food, 2347

INDEX

Blood, how it needs food, 3112
 is it alive? 5847
 its colour in our veins, 3090
 its specific gravity, 3816
 its temperature, 359, 4549
 red cells, 1383, 6094; picture, 1386
 the white cells, 1441, 6094
 what happens when we bleed, 4828
 what happens when we blush, 6093
 white cells, picture, 1446
 why does the colour rush from the face when
 we are frightened, 5959
 why it must be pure, 1789
Bloodhound, its scent, 502; picture, 501
Blood pheasant, its spurs, 1515
Bloodroot, description, 2837
Bloody Mary, name of Queen Mary, 2534
Blotter, how to make, and picture, 4247
Blotting paper, why it absorbs ink, 2074
Blowfly, name for the bluebottle, 3147
Blücher, Field-marshal, 2277, 2575, 2635, 4364
 Blücher after Waterloo, picture, 4361
Blue, primary colour, 4508
Blue beard, flower, 1350
Blue Beard, when the story got its present
 form, 1467
Blue-beech: see Hornbeam
Blue-bell, description, 4614, 5272
 its family, 5272; pictures, 2042, 4611, 4612
Blueberry: see Huckleberry
Bluebird, in Canada, 3497
Blue Bird, The, story, and picture, 3206
Bluebottle: see Cornflower
Bluebottle fly, 3144; picture, 3147
Blue clematis, picture, 5276
Bluecoat School, its founder, 845
Blue fleabane, picture, 5188
Blue-gown, name for a beggar, 1650
Blue Mountains, in Australia, 355, 1356
Blue Nile, river in Egypt, 281, 4260
Blue owl-pigeon, picture, 2213
Blue shark, 2444; picture, 2445
Blue tit: see Tomtit
Boa-constrictor, 1374; picture, 1375
Boadicea, British queen, 196
 statue, picture, 197
Boar, wild, its strength, 384; picture, 383
Board, its centre of gravity, 3835
Board, Ernest, his picture of the departure of
 John and Sebastian Cabot, 843
Boat, how to make a fleet, and pictures, 3824
 how to model it, 6061
 little boat that moves in the water, 5664
 making paper boat, and picture, 1925
 the first boats, 73
 why a boat capsizes, 3838
Boatbill, bird, 1955; picture, 1953
"Bobbies", nickname of London police, 5382
Boccaccio, Giovanni, life and writings, 5219;
 portrait, 5217
Boadwin, hanging the mayor, tale, 1320
Body, and air-pressure, 2229, 3944
 comparison with a house, 5760, 5910, 6015, 6090,
 6178, 6251, 6291
 comparison with a nation, 5282
 covered with muscle, picture, 2624
 does it change every seven years, 5852
 how alcohol affects it, 907
 how it is always working, 3550
 how it is built up, 2437
 how it is connected with the brain, 5762; pic-
 ture, 5760
 how it is kept cool, 1912
 how it makes use of food, 2695
 how it is warmed, 4114, 4183
 its centre of gravity, 3836
 why we have bones, 3546
Boeotia, state of Greece, 5124, 5129
Boer War, 1770
Boers, Dutch farmers in South Africa, 1769
Bog-bean: see Buckbean
Bog moss: see Sphagnum
Bog myrtle, picture, 5037
Bogota, capital of Colombia, 4574
Bohemia, state of Austria, 2576, 2858
 struggle for liberty, 2852
Bohemund of Tarentum, 1587, 1588
Boiling, why does it make potatoes soft and
 eggs hard, 5483
Boiling-point, how it is decided, 512
Boker, George Henry: see Poetry Index

Bolan Pass, in India, 1544
 picture, 1703
 railway through the pass, 3933
Boleyn, Anne, wife of Henry VIII., 844, 2534, 2708
Bolívar, Simon, liberator of South America,
 4506, 4572
Bolivia, flag, picture in colour, face 1640
 state of South America, 4500, 4572
Bologna, town of Italy, 3018
Bologna, Giovanni, sculptor, 4161
Bombardier beetle, 3416
Bombay, English possession, 1702, 3358
 given to Charles II., 4036
 port of India, 1548
Bonaparte, Hon. Charles Joseph, grandson of
 Jerome Bonaparte, 4911
Bonaparte, Jerome, stole The Waterseller, 760
 marriages of, 4907, 4910
Bonaparte, Jerome Napoleon, birth, life, and
 sons of, 4910, 4911
Bonaparte, Joseph, king of Spain, 3360
Bonaparte, Louis, king of Holland, 3463
Bonaparte, Napoleon, and his brother Jerome,
 4907
Bonar, Dr. Horatius: see Poetry Index
Bone, a growing and a grown-up bone, picture,
 2437
 bones of a finger, picture, 2440
 how it is made and what it does, 1384, 2439
 why our bones require salts, 2698
 why we have bones, 3546
Bone marrow, tissue of our bodies, 1384
Boneset, description, 5032
 picture, 5033
Bonhomme, Noel, French Santa Claus, 2146
Bon Homme Richard, the, and the Countess of
 Scarborough, 2893
 and the Serapis, 2898
Boniface, St., life, 3984; picture, 3983
Bonn, town of Germany, 2752
Bonner, Robert, editor New York Ledger, 2043
Bonnet, Daniel, his noble son, 1734
Bonnie Annie, tune of D'ye ken John Peel? 5494
Book of Marvels, old French book, 55
Book of the Dead, 4782, 4785, 4788

BOOKS

Child's Story of Famous Books

The following are the actual headings of
 the chapters in this section; the separate
 entries appear below and in their proper
 places in the index.

A Cheque for Ten Pounds, 5904
 A Fight with a Cannon, 5593
 A Good and Happy Girl, 5501
 A King on Kingship, 5360
 A Savage Goes a-Hunting, 5902
 A Winter's Tale, 550
 All's Well That Ends Well, 314
 As You Like It, 629
 Barnaby Rudge, 2761
 Ben Hur, 5225
 Bunyan's Pilgrim's Progress, 1115, 1135
 Capture of the Inca, 6302
 Castle (the) on the Cliff, 5597
 Charles O'Malley, 2903
 Chaucer's Canterbury Tales, 437
 Columbus sees America, 5506
 Comedy of Errors, 630
 David Copperfield, 2827
 Death of Cromwell, 5901
 Don Quixote's Adventures, 899, 949
 Gulliver's Travels, 1309
 Guy Mannering, 1603
 Hamlet, Prince of Denmark, 479
 Henry Esmond, 3265
 Iliad, the Odyssey, and the Æneid, 67
 Ivanhoe, 1645
 Jacob Faithful, 2197
 John Halifax, Gentleman, 3923
 King Lear, 633
 Little Women and Good Wives, 5143
 Martin Chuzzlewit, 2637
 Masterman Ready, 2025
 Measure for Measure, 549
 Merchant of Venice, 316
 Midshipman Easy, 2200
 Midsummer Night's Dream, 313
 Much Ado About Nothing, 351
 Nicholas Nickleby, 2633

INDEX

- Books**, Old Mortality, 1760
 Othello, the Moor of Venice, 473
 Peter Simple, 2023
 Rob Roy, 1599
 Robinson Crusoe, 1231
 Romeo and Juliet, 477
 Round the World in Eighty Days, 4865
 Scott's Waverley Novels, 1493
 Spenser's Faerie Queene, 687
 Tartarin in the Alps, 4655
 Tartarin of Tarascon, 4537
 The Abbé Constantin, 4761
 The Antiquary, 1649
 The Boy who asked for More, 2551
 The Chimes—a goblin story, 2285
 The Cloister and the Hearth, 4017
 The Count of Monte Cristo, 4325, 4407
 The Cricket on the Hearth, 2283
 The Daughter of King Charles, 5359
 The Day of the Comet, 5509
 The Death of a Queen, 5502
 The Fate of Dombey and Son, 2554
 The Gladiator's Appeal, 5504
 The Hand of Sir Walter Scott, 5904
 The Heart of Midlothian, 1757
 The History of Pendennis, 3473
 The Last of the Mohicans, 177
 The Marble Faun, 5432
 The Newcomes, 3603
 The Old Curiosity Shop, 2757
 The Old Man named Scrooge, 2159
 The Overthrow of Napoleon, 5362
 The Plague-stricken Home, 5596
 The Song of the Kettle, 5508
 The Stories of Charles Dickens, 2431
 The Taming of the Shrew, 635
 The Tempest, 315
 The Tilters of the Sea, 4171
 The Virginians, 3363
 The Water-Babies, 3801
 Tom Brown's Schooldays, 4063
 Twelfth Night; or, What You Will, 475
 Twenty Thousand Leagues Under the Sea, 4985
 Two Gentlemen of Verona, 631
 Walden, 6301
 Waverley, 1496
 Westward Ho! 3661
Books, chained books, picture, 3567
 how a book is made, pictures, 888
 how to draw an open book, with picture, 2415
 the earliest books, 3863
 the wonder book, 5652
 the wonder of a book, 887
 to cover with paper, 5523
 trick you can play with a book, 1073
Bookshelves, how to make, with pictures, 1617
Boom, to prevent boats passing, pictures, 4435
Boomerang, natives throwing it, picture, 354
 why it comes back, 3438
Boone, Daniel, explores Kentucky, 1820
Booth, Edwin, statue of, as Coriolanus, 4844
Booth, John Wilkes, kills Lincoln, 2022, 3536
Boots of various types, 3102
 A pair of old boots, story, and pictures, 4275
 how to clean boots, 4456
Borage, family of plants, 4112
Bordeaux, town of France, 2399
Borden, Sir Robert Laird, Canadian premier, 1248; picture, 1327
Boreas, god of the north wind, 2610
Borglum, Gutzon, sculpture of, with picture, 4840, 4850
Borglum, Solon, sculpture of, 4850
Boris, tsar of Russia, 3628
Borneo, island in Indian Archipelago, 3005
Borromeo, St. Carlo, his self-sacrifice, 1179
 his statue, picture, 1180
Bors, king of Gaul, 869
Borsippa, an old city of Babylonia, 4984
Borup, George, companion of Peary, 5212
 discovered Greeley's old camp, 5214
Boscawen, Admiral, at Louisburg, 885
Bosnia, became a kingdom, 3150
 conquered by Mohammed II., 3156
 its history, 3222
 national costume, picture, 3225
 province of Austria, 2860
Bosphorus, strait, 3149, 3224, 3874
Boston massacre, causes of, 982
 picture, 980
Bostwick, Helen: see Poetry Index
Boswell, James, his life of Johnson, 4679
 portrait, 4099
 Rousseau and Boswell, 4097
Bosworth Field, battle of, 756
Botany Bay, convict settlement, 355, 1356
Bot-ly, 3262; pictures, 3257
Bothnia, Gulf of, part of Baltic Sea, 3592
Bothwell, James Hepburn, Earl of, married Mary Queen of Scots, 3083
Botocondo Indians, of Brazil, picture, 4503
Botta, Monsieur, Assyrian discoveries, 4977
Botticelli, Sandro, life, 4950; portrait, 4945
 picture of Madonna and children, 4589
Bottle, how a glass bottle is made, pictures, 1174
 how to clean bottles, 4456
 musical instrument from old, 5448
Bottle corks, game, 6059
Bottle-nose whale, 1082
Botzaris, Markos, Greek leader, 3219
Bouch, Sir Thomas, built Tay Bridge, 20
Boucicault, Dion, wrote The Wearin' o' the Green, 3743
Bougainville, Louis A. de, discovered Samoa, 2190, 5774
Boughton, G. H., his picture of Dutch lasses, 3461
 his picture of Milton and Marvell, 3337
Boulton, Matthew, made steam-engines, 610, 655, 2470
Bounce about, garden game, 1072
Bournville, garden city, 2875
Bowel, how it is made and works, 2345
Bowell, Sir Mackenzie, as premier of Canada, 1248
Bowers, Lieut., body found, 5054
Bower-bird, its life-story, 1745
 nests of, 5784
 picture, 5780
Bowhead whale: see Right whale
Bowles, Miss, and her dog, picture by Reynolds, 4592
Bowles, William: see Poetry Index
Bowline knot, and pictures, 235, 236
Bowls, garden game, 1072
Bowring, Sir John, his work, 2000
 portrait, 1999
Bowsprit, of a ship, 3913, 4565
Box, right way to draw a box, 1693
Boxer rising in China, 114, 368
Boxer, the, and Enterprise, 2902
Boy, a boy's love for his mother, story, 4071
 at the giant's castle, story, and picture, 713
 boy and his dog, picture, 763
 boy and the ambassador, story, and picture, 319
 boys and the frogs, fable, and picture, 2303
 dead boy, in the Canterbury Tales, 443
 gallant deed of a boy king, story, 3254
 who became a king, story, 5075
 who changed into a toy soldier, story, and pictures, 5071
 who died for the Republic, with picture, 5512
 who forced back an army, story, 320
 who lost his shadow, 5693
 who saved a crew, story, 3884
 who saved his family, story, 1734
 who saved the boat, story, 4178
 who saved the hamlet, story, 2547
 who slept in the king's chair, 4642
 who took a man's place, story, 4010
 who walked to China, 54
 who would not fight against freedom, story, 1654
 whom France forgot, story, 330
 why a boy's voice breaks, 4827
 why boys are stronger than girls, 2456
Boy scouts, hints for boy scouts, 4032
 history of movement, with pictures, 3583
Boyards, Russian nobles, 3628
Boyle, Robert, scientist, his law about gas pressure, 3948
 life, 2114
 portrait, 2113
Boyle, Sarah Roberts: see Poetry Index
Boyne, battle of the, 1029
 battlefield of, 5462
Brabant, dukes of, in Netherlands, 3458
Bracket, fretwork, with pictures, 5293
Braddock, General Edward, death, 884
 expedition of, 540, with pictures, 882, 883

INDEX

- Bradford, Governor**, instituted Thanksgiving Day, 4467
- Bradford, Sir Edward**, adventure with a tiger, 5724
- Bradley, James**, life, 1662; portrait, 1655
- Bradshaw, John**, his power in the Commonwealth, 1026
how Charles II. treated his body, 4640
portrait, 1896
- Brady, Nicholas**, wrote psalms, 1997
- Bragg, General**, at Chickamauga, 2018
- Bragi**, god of poetry, 3581
- Brahm, John**, famous tenor, 3740
- Brahe, Tycho**, life, 1657; portrait, 1655
- Brahman** and the goats, 5421
and the pots, 5421
- Brahmanism**, religion of India, 2995
- Brahmaputra River**, rises in Tibet, 3936
- Brahmas**, kind of fowl, 1513
- Brahmins**, Hindoo priests, 1552, 1699
- Brahms, Johannes**, composer, 3252
- Brain**, controls sight, 3543
effect on working of the mind, 4941
eye is part of the brain, 3976, 3977
feels no pain when cut, 4121
how alcohol affects it, 4344
how bad air affects it, 1789
how it controls digestion, 3109
how it controls the heart, 1583
how it is protected, 2542
how thinking makes it heavier, 1584
in sleep, 3379
its growth, 4596
its shape, 4444
its size, 4596
needs food, 1132
sends messages through nerves, 3563
the mystery of the brain, 3715
the parts of the brain, 3775
what happens when we think or see, 5763
- Pictures of Brain**
grey matter magnified, 3721
inside and outside of our brains, 3717
man's brain compared with that of other creatures, 3715
section across one side, 3721
showing Broca's area, 3779
what happens when we think or see, 5760
- Brakespeare**, gave Ireland to Henry II., 5460
- Bramante, Donato**, portrait, 4945
story of his life, 4950
- Brambling**: see Mountain finch
- Bran**, covering of the wheat grain, 2924
- Brandenburg**, absorbed Prussia, 2550
attacked by Swedes, 2530
- Brandon, Canada**, description, 5368
- Brandy-bottle**, the yellow water-lily, 4960
- Brandywine**, battle of the, 988
- Brass**, from copper and zinc, 288, 1870
- Brassey, Thomas**, built railways, 616
- Brazil**, became independent, 3360
brought wealth to Portugal, 3354
Botocudo Indians, picture, 4503
discovery of, 258
flag, picture in colour, face 1640
how it became a republic, 4506
Indian milkman, picture, 4503
its connection with Portugal, 4568
its people, 4567, 4568
its position and size, 4500
its products and trade, 4567, 4568
- Brazil nuts**, 1966; picture, 1967
- Brazilian birds**, nest of, pictures, 5785
- Bread**, contains much water, 1172
crumb, through microscope, picture, 2324
high price of, 5644
how it is made, pictures, 1151
how we get our bread, 1143, 2923
how yeast makes bread rise, 1872, 3241
proportion of water in it, picture, 1171
why does yeast make it rise, 5957
why it is called the staff of life, 2078, 5644
why its price changes, 5170
- Bream**, fish, 2682; picture, 2683
- Breathing**, air passages in the mouth and throat, picture, 1635
how it is affected by light, 1909
how it varies, 1787
how we breathe, 1634; with pictures, 1637
what happens when we breathe, 4442, 6255
- Breathing**, what it is, 285, 3942
what the breathing centre is, 1638
why our breath rises in the air, 2233
why we breathe, 6254
why we cannot breathe under water, 3763
why we cannot see our breath on a warm day, 154
why we get out of breath running, 1131
why we must breathe through the nose, picture, 6178
- Breccia**, rock, 5198
- Brechan, St.**, Welsh king, 4277
- Breckinridge, John C.**, nominated as president, 2010
- Brecon**, how it got its name, 5382
- Breeches buoy**, use, with picture, 4430
- Bremen**, its shipbuilding, 2750
joined Hanseatic League, 2526
- Brennan, Louis**, invention of gyroscope train, 89, 90
- Brennus**, besieged Rome, 3554
- Brer Rabbit**, and Brer Fox, 187
and his riding-horse, 4643
and Miss Cow, 188
and Mr. Bear, 187
and the tar-baby, 3851
Brer Tortoise helps Brer Rabbit, 4702
helps Brer Tortoise, 4702
Miss Goose's washing, 4703
the great race of, 188
- Brescia**, where Bayard died, picture, 129
- Breslau**, city of Prussia, 2752
- Brest**, port of France, 2399
- Bretons**, their dialect, 2400
- Brett, Jacob**, laid a cable, 2474; portrait, 2467
- Brewer, Ebenezer**: see Poetry Index
- Brewster, Sir David**, improved the microscope, 2320
- Brian Boru**, his harp in Dublin, 5461
Irish king, 2029
- Briarwood**, what it is, 5524
- Bribe**, man who refused a bribe, story, 4557
- Brick**, how to blow it over, with picture, 4457
how to see through it, with pictures, 4033
what to do with bricks, with pictures, 4352
with ancient writing, picture, 5099
- Bride of Lammermoor, The**, story of the novel, 1495
- Bride of the Wandering Prince**, story, 1190
- Bridge**, expands in the sun, 2621
building of Victoria, 2261
Grand Trunk, picture, 4094
how bridges are made, 19
how some famous bridges were made, pictures, 21
how to make, of reels and bricks, 4352
the different kinds, 19
what the bridge of a ship is, 4564
why bridges are arched, 2328
why it sways, 4744
wrecking of Quebec, 2262
- Bridge-board**, game, 2572
- Bridge of Sighs**: see Venice
- Bridgetown**, Barbados, its schools, 1878
- Bridgewater Canal**, opened, 1096
- Brien, Lake**, in Switzerland, 2960
- Brig**, what it is like, 3915; picture, 3914
- Brigantine**, 3915; picture, 3914
- Bright, Charles Tilston**, laid the Atlantic cable, 2474; portrait, 2467
- Bright, John**, and Cobden, picture, 3705
his work as a reformer, 3703
- Brighton**, old woman at, tale, 1108
- Brigue**, Italy, 6204; picture, 6214
- Brill**, how many eggs it lays, 206
- Brisbane**, city of Queensland, 1360
- Britain**, discovered by Phœnicians, 279, 5122
invaded by Julius Cæsar, 420
its early animals, 50
- Britannia Bridge**, Menai Straits, 19
- British Army**, in Afghanistan, 3933
- British Columbia**, admitted, 1247
as tourist-resort, 5611
education in, 5233
minerals in, 5599
province of Canada, 216, 220
- British Empire**, 4035
empress proclaimed, 4037
in Africa, 1765
outposts of, 1875

INDEX

British Empire, races of, 4039
religions of, 4039
the aim of its rule, 1880

See also **British Isles, England, &c.**

British Guiana: see Guiana
British Honduras, in Central America, 1878
British Isles, climate, 50, 1860, 4323
flag, 2333
population, 1644, 2400

Pictures of British Isles

Ireland, bird's-eye view, 5462
map, lighthouses, and lightships, 4426
relief map, 3822
Union Jack, in colour, face 1640

See also **British Empire, England, Scotland, Ireland, and Wales**

British Museum, Assyrian and Babylonian relics, 4972

how it was built, 1162
its Anglo-Saxon room, 423
its prehistoric room, 192
picture, 1159

British Navy, how the ships are watched
from London, picture, face 3519
the greatest navy in the world, 6233-44

British North America Act, passed, 1244

its part in Canadian government, 1325

British people: see English people

Britons, race in England, 196

two British chiefs, picture, 197

Brittany woman, picture, 2395

Brittle starfish, its limy skin, 2342

pictures, face 2335, in colour, 2337

Broadway, notes on, 4306

Broca, Paul, and the speech centre, 3779

in command of forces of Upper Canada, 746

Brocken, mountain in Germany, 1724

the Brocken and its shadow, picture, 1724

Brockville, Can., appearance, 5426

Broke, Captain, commander of the Shannon, 1399, 2902

Broken Hill, New South Wales, 1362

Broken limbs: see Fracture

Brome, grass, pictures, 1336, 1337, 1338

Bromine, liquid element, 1290, 3093

Brompton stocks, 5270; picture, 5275

Bronchi, tubes leading to the lungs, 1636

Brontë sisters, life, 2596; portraits, 2593

writing their stories, picture, 2597

Brontosaurus, fossil lizard, 18, 48

possible existence, 5572

restored, pictures, 44, 5571

Bronze, what it is, 1292, 1870

Bronze Age, 1292

Brooke, Sir William, studied telegraphy, 2474

Brook-lime, plant, picture, 3831, 4968

Brooklyn Bridge, pictures, 25, 26

Brooks, Thomas, his picture, Shakespeare before Sir Thomas Lucy, 3333

Broom, flowers, 4610; pictures, 4613, 4615

Broom rape, lives on other plants, 3830

Brotherhoods of Railwaymen, 4092

Brown, Dr. John, and brains, 3780

Brown, Ford Madox, his picture of Oliver Cromwell, 1890

picture of Chaucer, 3326

Brown, H. K., sculpture of, 4850

Brown, Jacob, in Canada, 746, 1399

Brown, John, attack on Harper's Ferry, 2010

3536

Brown ant, its nest, 2944

Brown bent grass, picture, 2980

Brown bread, 1143, 2924

Brown hairstreak, a butterfly, 2992

Browne, Frances, her life, 1471

wrote Granny's Wonderful Chair, 1043

Brownie camera, how to use it, with pictures, 4243

Brownie of Snaefell, legend, 2377

Browning, Elizabeth Barrett, her life, 3912

poems: see Poetry Index

portrait, 3907

Browning, Robert, his life, 3912

born in Camberwell, 4910

poems: see Poetry Index

portrait, 3907

quotations from, 1573, 4596

Brownlow, E. B.: see Poetry Index

Bruce, James, explored Abyssinia, 280

his book, 282; pictures, 280

Bruce, Michael: see Poetry Index

Bruges, town of Belgium, 3455, 3458

Bruises, how to treat, 3397

Brunel, Isambard Kingdom, built the Great

Western, 74, 2472

helped with the Thames Tunnel, 616

portrait, 2467

Brunel, Sir Marc Isambard, how he got his

idea for the Thames Tunnel, 51, 2587

Brunelleschi, Filippo, his life, 2782

portrait, 2779

set egg on end, 5524

Bruno, Giordano, burnt to death, 1660

his idea that all stars were suns, 5025

his work, 1943, 2609

Brush, for pasting, picture, 333

how to hold in painting, 254

to use for painting, 253

Brush-and-comb bag, how to make, and pictures, 232

Brush-turkey, 1520; picture, 1519

Brush-work: see Drawing

Brussels, capital of Belgium, 3455, 3460

picture, 3454

Brussels sprouts, 2971

Brutus, Lucius Junius, overthrew Tarquin, 413;

picture, 415

Brutus, Marcus, killed Julius Cæsar, 421

Bryant, William Cullen, his life, 1478

poems: see Poetry Index

portrait, 1475

Bryony, black, picture, 4615

Bubble, what it is, 3095

Buchan, the store that never grew less,

legend, 3208

Buchanan, George, tutor of Montaigne, 5220

Buchanan, James, as president, 2009, 2010, 3536

picture, 3532

Bucharest, capital of Roumania, 3220

Buckbean, description, 2841, 4112, 5032; picture, 5031

Bucket: see Pail

Buckingham, George Villiers, Duke of, 1887

Buckland, Frank, how he was poisoned, 1374

story of him and an eagle, 1842

Buckland, William, scientist, 854

Buckthorn, sea, picture of, 5192

Bud, how it gets colour, 4442

Buda-Pesth, capital of Hungary, 2576, 2860, 5714, 5716

pictures, 2855, 5711

Buddha, Buddhist prayer-shop, picture, 371

his image, 370

his life and teaching, 2995

images, pictures, 371

portrait, 2995

spread of his doctrines, 1700

the crane and the wise crab, fable, 4224

the strongest thing, fable, 4223

the wise and foolish fairies, fable, 4223

teaching his pupils, picture, 2994

Buddhism, became the religion of China, 110

religion of the Singhalese and Burmese, 1880

religion of Tibet, 3936

spread into Japan, 364

what it teaches, 2996

Buenos Ayres, founded by Mendoza, 4505

its improvement, 4569

its progress, 4505

its trade, 4568

picture, 4570

Buffalo, lived in Manitoba, 214

pictures, 277, 1831

seen by Quivira, 262

what kind of animal it is, 269

Buffon, Georges, thought that life began in

the sea, 360

Buff-tip butterfly, picture in colour, face 2982

Buf with a wand, game, 5000

Bugle, flower, picture, 4286

Bugloss, belongs to borage family, 4112

Building, how buildings are repaired, pictures, 3043

made of iron, 622

steel skeleton of a building, picture, 623

the Greeks as builders, 622

to withstand earthquakes, 3232

two wonderful buildings, pictures, 619

what holds a building up, 617

INDEX

- Building**, what the first buildings were like, 618
- Bulb**, how to grow in bowls, 1816
how to treat, 573, 1610, 1716
must get moisture, 2254
- Bulb mites**, picture, 3297
- Bulbul**, bird, 2060
- Bulgaria**, flag, picture in colour, face 1640
its history, 3220
national costume, picture, 3225
ravaged by the Russians, 3154
subdued by Basil II., 3154
- Bulgars**, where they settled, 3150
- Bulkheads**, of a ship, 4566
- Bull**, why red irritates it, 2800
- Bull, John**, and National Anthem, 2331
- Bullen, Frank**, tells of a fight between a sperm-whale and an octopus, 2452
what he said of flying-fish, 207
- Buller, Charles**, secretary, 1240
- Bull-fighting**, 3362; picture, 3359
- Bullfinch**, its life-story, 2053
pictures, 1744, 2059
- Bull-head**, fish, 2684; picture, 2683
- Bull Run**, battle of, 2013
second battle of, 2016
- Bull-trout**, fish, 2680
- Bulrush**, and seeds, pictures, 3833
name for reed-mace, 4963
- Bulwarks**, of a ship, 4564
- Bumps**, of the head, and character, 2544
why does a bump come instead of a dent
when we knock our heads, 5642
- Bunch-berry**, description, 3050
- Bundle of rags**, game, 4144
- Bung the bucket**, garden game, 1072
- Bunker Hill**, battle of, 984
- Bunsen battery**, with picture, 1076
- Bunting**, bird, the different kinds, 2057
picture, 2059
- Bunyan, John**, his life, 1725
poems: see Poetry Index
pictures, 1725, 1727
wrote *The Pilgrim's Progress*, 1023, 1115
- Buonaparte**: see Bonaparte
- Buoy**, what it is, 4425
- Burbank, Luther**, life and birth, 3483
picture, 3482
- Burdock**, what it is like, 4190
- Burghley, Wm. Cecil, Lord**: see Burleigh
- Burglars**, identified by finger-marks, 1864
- Burgoyne, General John**, portrait, 981
the march of, 983
- Burgum**, a friend of Chatterton, 5318
- Burgundians**, settled in Switzerland, 2962
- Burgundy, Duke of**, ruled Netherlands, 3458
- Burke, Edmund**, his life and work, 4091, 4097, 4100
throwing dagger on floor of the House, picture, 4101
- Burke, Robert**, explored Australia, 357
last days of Burke, picture, 358
- Burleigh, William Cecil, Lord**, counsellor of Elizabeth, 846, 2380; portrait, 2379
- Burma**, country of India, 1880
tiger woman of Burma, story, 5316
- Burn**, how to treat, 5110
- Burna-buriash**, wrote Tel-el-Amarna tablets, 4984
- Burne-Jones, Sir E.**, his picture of King Arthur resting, 866
- Burnet**, salad, 4418
picture, 4420
- Burnett, Frances Hodgson**, life, 2048
- Burney, Dr. Charles**, father of Fanny Burney, 2591; portrait, 4099
- Burney, Fanny**, destroying manuscripts, picture, 2595
life, 2591; portrait, 2593
- Burning**, what it is, 5022
- Burning-glass**, how it burns paper, 4181
- Burns, James Drummond**, minister, 2000
poems: see Poetry Index
- Burns, Robert**, his birthplace, picture, 3903
his life, 3906
meeting between him and Scott, picture, 3902
poems: see Poetry Index
portrait, 3907
portrait bust of, 4848
reading *The Winter Night*, picture, 3902
- Burnside, General**, at Fredericksburg, 2016
- Burnt almonds**, how to make, 3512
- Burr, Aaron**, 1398
- Bur-reed**, picture, 4964
- Burrhus**, captain of Nero's guard, 530
- Burrowjack**, blowing bubbles, picture in colour, 3645
gnome, in story, 2143, 3644
- Burton, Decimus**, his arch at Hyde Park Corner, with picture, 5003, 5004
- Burton Port**, the doctor of Burton Port, story, 463
- Burying beetle**, 3264; pictures, 3261
- Busby, Dr. Richard**, schoolmaster, 3903
- Bushman**, tribe of South Africa, 1763
- Bussell, Grace**, how she rescued the people on a wreck, story, with picture, 4069
- Bust**, in art, 4159
- Butcher-bird**, name for the shrike, 1848, 3494
- Butkus scorpion**, picture, 3301
- Butter**, how it is made, 1144
how it is made, pictures, 1154
how microbes help in making, 904
why it is a good food, 2793
- Buttercup**, family, 4110, 5270
pictures, 3735, 4191
resemblance to water crowfoot, 4961
various kinds, 4190
- Buttercups and bees**, game, 3516
- Butterfly**, British butterflies and moths, picture in colour, face 2982
butterflies and moths, 2983
coiled tongue of a butterfly, through the microscope, picture, 2326
how to tell a butterfly from a moth, 2985
- Butternut**, description, 4490, 5623
flowers, picture, 4489
tree, picture, 5629
- Butterwort**, picture, 5030
- See also Common and Great Butterwort
- Button**, back buttons on coat, 5650
how to make from bootlaces, with picture, 5199
how to sew on, with picture, 717
- Buttonhole**, how to do buttonhole stitch, with picture, 457
how to finish off, with picture, 717, 718
how to make buttonhole scallops, with picture, 577, 578
- Buttonwood**, description, 5440
picture, 5445
- Buz**, game, 237
- Buzzard**, in deserts, 3590
life-story, 1844; picture, 1845
- Byard's famous leap**, legend, 3208
- Byron, John**: see Poetry Index
- Byron, Lord**, his life, 3909
loved the Greeks, 3220
poems: see Poetry Index
portrait, 3907
- Byssus**, of the mussel, 2590
- Byzantine Empire**, founded, 3150
included the Holy Land, 1585
ruled over by Baldwin II., 1589
ruled Roman world, 534
- Byzantine style**, in painting, 4585
- Byzantium**, called Constantinople, 534
taken by Constantine, 3150
taken by the Athenians, 5129
- See also Constantinople
- C
- Cabbage**, how to grow, 2971, 3826
skunk, description, 2836
- Cabbage butterfly**, 2988
- Cabinet**, how to make from cigar boxes, and picture, 4880
- Cabinet, The President's**, description of, 1596
- Cable**, how to find where broken, 4550
laying a cable, pictures, 2475, 4551, 4552, 4553, 4554, 4555
Nova Scotia to West Indies, 1878
the Pacific, 3538
- Cablegrams**, how they are sent, 3521
- Cabot, John**, voyages of, 258
- Cabot, John and Sebastian**, picture, 843
voyages, 535

INDEX

- Cabot, the, war-ship**, 2898
Cabral, Pedro Alvarez, explorer, 4502
Cabs, first in London, 6105
 hansom, invented by J. A. Hansom, 6107
 limited by Charles L., 6106
Cacao-tree, gives us chocolate, 2237
Cachalot: see Sperm whale
Cactus, 3949; pictures, 3975
 spineless and edible, 3486
Caddis-fly, 3262; picture, 3259
Cade, Jack, not an ignorant rebel, 5524
Cadiz, expedition against, 5396
 founded by Phœnicians, 5122
 port of Spain, 3361; picture, 3357
Cædmon, early English poet, 430, 469
Caffeine, its effect on the brain, 3316
Cage, of cardboard, and picture, 2489
Caille aerolite, picture, 2500
Cairo, capital of Egypt, 4256
 how it appears to the traveller, 5813
 its bazaars, 5814; pictures, 5816
 pictures, 4255, 4257, 5813, 5816
 what you see in its streets, 5814
Caisson, in bridge building, picture, 21
Cakes, how to make, 3285
Calabria, province of Italy, 3012
Calah, discoveries, 4973, 4977; picture, 4975
Calais, captured by Edward III., 750
 how Philippa saved its citizens, 2533
 incidents in history of, 5331
 lost by England, 846, 2068, 2535, 2704
 statue of citizens, picture, 4169
Calceolaria, how to treat, 1350, 1817
Calcium carbonate, a common salt, 1798
Calcium sulphate, how it is formed, 1800
Calcutta, English factory set up, 1702
 Jain temple, picture, 2231
 largest city in India, 1548
 the Black Hole of Calcutta, 1704
 trading posts in and near, 4036
Caldecott, Randolph, his pictures, 2641
Caldwell, William: see Poetry Index
Calgary, description of, 5370
 Main Street, picture, 2265
Calhoun, John C., leader of South Carolina, 355
 portrait bust, 4344
California, admitted as free state, 2008
 Californian orange-grove, picture, 643
 compromise concerning, 3536
 kind of telegraph used there, 4313
 settlement and admission, 1834
Caligula, Gaius Cæsar, floating palace of, picture, 5706
 his cruelty, 4946
 portraits, 529
 Roman emperor, 529
Calisto, was turned into a bear, 3314
Callao, port of Lima, 4506, 4574
Caller Pit, chest of, legend, 4277
Calling crab, 2586
Calmar, union of, 3594
Calopogon, description, 3050
Calorimeter, picture, 4473; what it is, 4474
Calvin, John, his teaching, 3460
Calypso borealis, description, 3049
Calyx, of a flower, 1203
Camberwell beauty, butterfly, 2992; picture in colour, face 2982
Cambyeses, king of Persia, his reign, 5058
Camel, and poisonous plants, 5481
 its life-story, 276, 2328
 pictures, 51, 273, 1545, 3879
 travels in the deserts, 269
Camera, a penny camera, and pictures, 5294
 how it takes a picture, 39
 how to photograph without, 2685
 how to use a Brownie, and pictures, 4243
Camillus, Marcus Furius, 414, 3554
Camomile: see Chamomile
Campania, province of Italy, 3012
Campanula, how to treat, 1816, 2042
Campbell, John, vice-admiral, 4010
Campbell, Sir Colin, relieved Lucknow, 1706
Campbell, Thomas, as poet, 2578, 3738
 poems: see Poetry Index
 portrait, 3737
Camphor, how it keeps moths away, 4121
Campion, its family, 4111
Campion, picture, 5191
Campion, Edmund, died for his faith, 5067
Canaan, wars with Mesopotamia, 4974
Canada, act of union, 746, 1240
 American settler, the, 6054
 American tourist in Canada, the, 6133
 as Dominion, 1244, 1328
 as English colony, 742, 4037
 as nation, with pictures, 1239
 as province, 1240
 attempt to win her over to the American Revolution, 743
 Barren Lands, 1918
 British North America Act, 1244, 1325
 Cabinet of, 1326, 1328
 Canada, first mention of, 536
 Canada of to-day, 1248
 Canadian habitant, the, 5875; pictures, 5873, 5874
 Canadian Rockies, and beyond, with pictures, 5607
 census of, 3781
 civil government, 539
 climate of the northwest, 5365
 coal in, 5601
 common land birds of, 3037, 3488
 confederation of, 1244
 decrease of population in, 3782
 difference in races and ideals, 6283
 Doukhobors in, the, 6052
 education in, 1242
 first code of laws, 538
 first Dominion Parliament, 1246
 first legislative council, 742, 1240
 first parliaments, 745, 1240, 1246
 fisheries, 5601
 flag, picture, in colour, face 1640
 forests and their wealth, 3783, 5604
 French Canada before the Conquest, 535
 French in Canada, the, 5869
 fur traders and trappers, 5147
 future of, 6283
 game and fish found there, 6186
 government of, 1244, 1325
 government of Northwest Territories, 1330
 government of Yukon Territory, 1330
 governors-general, 1248, 1325; residences, pictures, 1324, 2562
 House of Commons, 1326
 how new settlers are drawn there, 6049
 how the French Canadians are educated, 5870
 how the French have increased, 5869
 invasions of, 743, 746, 1398, 1399, 5148
 islands in Arctic Ocean, 1920
 its Chinese immigrants, 6050
 its colonisation, 218
 its grants of public lands, 6049
 its Hindu immigrants, 6052
 its immigrants, 6049
 its immigration policy, 6054
 its Japanese immigrants, 6050
 its size, 211
 Legislative Assemblies of Provinces, 1328
 Legislative Councils of Quebec and Nova Scotia, 1330
 Lieutenant-Governor, 1330
 map, 211
 Maple-leaf emblem of, 2461
 maritime provinces, 745, 5601
 mineral resources, 1248, 5599, 5601
 mounted police, 4577
 naming of, 536
 National Anthem, 2466
 nationalities of inhabitants, 3782
 new west, the, 5365
 Northwest Territories, 1918
 ocean wealth of, 3897
 parliament, 214, 1244, 1326
 Premier of, 1326; picture, 1327
 present day conditions, 6190
 products, 216
 provincial governments, 1328
 qualities of the French Canadians, 5872
 Quebec Act, 742
 railways in, 2261, 5366
 Rebellion of 1837, 746, 1239
 reciprocity treaty, 1242, 1248
 religions in, 3782
 resources, 1248, 6284
 Riel Rebellion, the, 1246

INDEX

- Canada, St. Lawrence River**, description of, with pictures, 5425
 scenes in, pictures, 1324, 1329, 1752-1755, 1917, 1919, 2245, 2247, 2263, 2265, 2266, 2562, 2778, 3901, 4240, 4303, 5237, 5429, 5430, 5602-5612, 6053, 6056, 6187, 6189
 schools and schoolmen in, 5233
 seigneurial system, 539
 Senate, 1326
 settled, 4036
 spirit of Canada, the, 6283
 story of Canada in the past, 218
 territories of, 1247
 the Empire's wonderland, 211
 towns and physical features, 212
 Ungava, 1915
 unknown parts of, 1915
 war between England and France, 219, 1094
 well-known Canadians, 4299
 wheat in, 2264, 5365
 where the French language is spoken, 5370
 wild flowers of, 2335, 3049
 winter sports in, picture, 1753, 5209
 Yukon Territory, description of, 1916
- See also **Acadia, Hudson's Bay Company, Louisburg, Newfoundland, Quebec**, and names of individual provinces
- Canadian Northern Ontario Railway**, 2264
Canadian Northern Quebec Railway, 2264
Canadian Northern Railway, building of, 2264
Canadian Pacific Railway, 29, 1247, 1364
 building of, 2264
 irrigation dam at Bassano, Alta., picture, 2265
 scenes along, pictures, 2263
Canadian porcupine, with picture, 669, 671
Canals, can be seen in Mars, 2427; picture, 6202
 Erie, 1826, 3534
 of France, 2394
 of Holland, 3456
 Panama, 2190, 3533; with pictures, 5631
 Rideau, picture, 4095
 Suez, 2392, 5631
 Welland, 1240
Canal Zone, leased by United States, with pictures, 2417, 5632
Canaris, Constantine, Greek leader, 3219
Canary, 2058, 2323; picture, 2059
Canary Islands, home of the canary, 2058
Canary-seed, how to grow, 2563
Cannale, oyster farm, picture, 3773
Cancer-root, description, 3053
Candle, fired through door, with picture, 3466
 how a candle is made, pictures, 2362
 how to make a candle-shade, 100
 is a box in which a candle has burnt lighter than a box and a candle? 5685
 is a lighted candle in front of a mirror equal to two candles? 5642
 what happens when it burns, 833
 why blowing puts it out, 3691
Cannines, the corner teeth, 2098
Cannæ, battle of, 5264
Cannas, when to plant out, 3398
Cannibal, word formed from Carib, 1877
Canning, Sir Samuel, engineer, 2476
Cannon, fight with a, 5593
 how to make a toy cannon, and picture, 4245
Cannon-ball, and immovable post, 2333
 falling of, 5165
 why it bounces out of the sea before it sinks, 5852
Canoes, used in Central Asia, picture, 3937
Canonise, its meaning, 1007
Canopus, star, its size, 4438
Canova, Antonio, his lion of butter, picture, 5842
 his tomb, picture, 5008
 how he modelled as a boy, 5841
 portrait, 4945
 sculptor, 4162, 4956
Cant, how the word got its meaning, 4074
Cantabrian Mountains, 3354
Canterbury, New Zealand, 1464
 not first Christian Church in England, 5524
Canterbury bell, 719, 3278, 4112
Canterbury Tales, 437, 6020
Cantilever bridge, how it is built, with pictures, 20, 21
- Canton, China**, 116
 lady of Canton, picture, 109
Canton, John, invented electrical instruments, 2118; portrait, 2113
Canute, emperor of the north, 3594
 king of England, 434, 592, 2701, 5941
Cape Breton Island, in Nova Scotia, 5601
Cape Colony, became British, 284
 flag, picture in colour, face 1640
 its history, 1768
 its observatory, 2612
Cape jumping hare, 670; picture, 671
Cape of Good Hope, 69, 279
Cape petrel, 1627
Cape pigeon, 1626
Capercaillie, a kind of grouse, 1518
Capet, Hugh, count of Paris, 2066
Cape Town, 1768; picture, 1767
Capillaries, for the blood, 1579, 1584
 pictures, 1581, 1636
Capillarity, what it is, 4824
Capitol, fortress of the Romans, 554
 held out against Gauls, 5262
 in Washington, 1708
 picture, 5259
Capitol, the climb up the Capitol hill, story, 3554
Capitoline Hill, in Rome, 5260
Capitoline Museum, in Rome, 5802
Capping verses, game, 5113
Capture of the Incas, 6302
Capybara, animal, and picture, 667, 669
Caracalla, Roman baths, 5253, 5306
Caracara, hawk, 1846; picture, 1847
Caracas, town, 4576; picture, 4570
Caractacus, British chief, 196; picture, 197
Caravans, 6037
Carbo-hydrates, what they are, 1872, 2345
 work in our bodies, 2698
Carbolic acid, 1873, 2506
Carbolic powder, for cleaning teeth, 2100
Carbon, an element, 839, 1289
 can be made volatile, 3093
 found in plants, 228
 how it is supplied to the body, 2695
 in comets, 2499
 why it is important, 285
Carbonate, a salt, 1798
Carbonate of lime, insoluble in water, 5250
Carbon compounds, chemistry of, 1869
Carbonic acid gas, can be made solid, 4050
 how it is absorbed, 5847
 how it is carried to the lungs, 1801
 how it mixes with the air, 3090
 its taste, 1797
 makes food for plants, 229, 285, 2375, 3340, 4442
 proportion of, 5789
 what we breathe out, 228, 1290, 1787, 1798
Carbon oil, from petroleum, 4131
Carcassonne, town of France, 2398
Card, cards that tell any number thought of, 5660
 games with cards: see Games
 horseshoe card problem, 4667, 4778
 how to identify, trick, 4243
 that helps us make designs, 5450
Cardboard dolls, how to make, and pictures, 341
Carden, Captain, commander of the Macedonian, 2902
Cardinal, red, bird, picture, 2055
Cardinal-flower, description, 3053
Carey, Henry, poems: see Poetry Index
 portrait, 3737
 wrote Sally in our Alley, 3741
Carey, Lady E.: see Poetry Index
Caribbean Sea, 1877, 4497
Caribon, in the Barren Grounds, 1918
Caribon Mountains, part of Selkirk's, 5607
Caribs, people of the West Indies, 1877
Carleton, Sir Guy, in Canada, 742, 743
Carlina, plant, and picture, 1509
Carlotta, empress of Mexico, 4392
Carlyle, Thomas, friendship with Emerson, 1479
 his life and work, 4104
 life of Schiller, 5222
 on the oak, 2882
 pictures, 4097, 4106, 4107
 two men I honour, 5398

INDEX

- Carmencita**, picture, 4153
Carnac, stone monuments, 2063
Carnatic, district in the Deccan, 1546
 nawab of, 1704
Carnation, cultivation, 1203, 5269
 its family, 1817, 4111, 5270
 picture, 5274
Carnegie, Andrew, gifts of, 6278
 his quick wit, 6276
 life of, with pictures, 6275
Carnegie Hall, 4584
Carnivals, winter in Canada, 5210
Carnivorous animals, 142, 2099
Carnot, Lazare, 4356; portrait, 4053
Caroline, colonies of, 523
Caroline, queen of George II., 2540
Caroline, queen of George IV., turned from
 Westminster, and picture, 4642
Carols, what they are, 2149
Carp, lives after being frozen, 2681; pictures,
 51, 2679
Carpaccio, Vittore, artist, 1258
Carpathian Mountains, 2860, 5712, 5714, 5720
 picture, 5717
Carpels, of a flower, 4110
Carpentier, Edouard, his picture, 4059
Carpentry, boy carpenter's box of tools, and
 pictures, 337
 making rustic articles, and pictures, 4349
Carpet, how did the ladies cut the carpet?
 problem, and picture, 1281, 1348
 why the sun fades carpets, 4548
"Carpet-baggers," in the South, 2024
Carrara, marble, pictures, 3022
Carriack bend knot, and picture, 235
Carrier pigeon, 2215
Carriion crow, 1848; pictures, 1744, 1847
Carroll, Dr. James, helped to conquer yellow
 fever, 3200
Carroll, Lewis, his life, 1472
 picture, 1473
 poems: see Poetry Index
 story of Alice in Wonderland, and pictures,
 2929
Carrot, 4353
Cartagena, on the Caribbean Sea, 4505
Cartaret, Sir George, bought New Jersey,
 521
Carthage, and Rome, 414, 5511
 colony of the Phœnicians, 5122
 destruction, 5264
 on the Caribbean Sea, 4505
 Regulus' return to, 5511
 war of, 5511
Carthage, arsenal of Spain, picture, 3357
Cartier, Jacques, 217, 218, 535
 explorer, 2070
 portrait, 261
 takes colonists to Quebec, 536
Cartilage, is gristle, 2439
Cartoons, made by Raphael, 758
Cartouche, what it is, 4785
Cartwright, Edmund, his invention, 3996
Cary, Alice and Phœbe, lives, 2044
 pictures, 2043
Cary, Miss Jennie, first sang "Maryland,"
 2957
Cary, Phœbe: see Poetry Index
Casabiana, Giacomo, his death, 3472
Cascade Range, different from Coast Range,
 5607
Cashmere, king who came to, story, 2745
Cashmere goat, 380
Casia, Empress, 3153
Caspian Sea, loss of water, 3072
 railways from Moscow, 3750
 the largest inland sea, 3623
 thoroughfare for Russia, 3630
Cassatt, Mary, a painter, 4152
Cassiopeia, legend of, 3313
Cassites, their wars, 4974, 4976
Cassowary, and picture, 1428, 1429
Caste, among the Hindoos, 1550, 1699
Castle, on the cliff, 5597
Castriot, George: see Scanderbeg
Castro, Mark, rescued passengers of the
 Cherokee, 3106
Cat, a flesh-eating animal, 2207
Cat and parrot, story and picture, 2494, 4912
 belling the cat, fable, and picture, 200
 cat and mice, fable, and picture, 4274
 cat, eagle, sow, fable, with picture, 4805
 communication of ideas, 5325
 does not cry, 5383
 drawing of a cat made from squares, 1073
 fondness for valerian, 4970
 how it purrs, 1130
 how its hair stands on end, 1962
 how long it lives, 2328
 how necessary cats are, 45
 how to draw with two coins, 3514
 Madame Theophile, 2494
 not responsible for Dick Whittington's for-
 tune, 5524
 of the same family as the lion, 132
 stuffed cat, with picture, 575
 the different kinds, 502
 the king of the cats, legend, 2744
 various cats, pictures, 505
 why cats fall on their feet, 1573
 why it arches its back on meeting a dog, 5845
 why it can see in the dark, 153
 will stay in empty house, 5411
Catacombs, in Rome, 5806
Catalonia, province of Spain, 3353
Catalpa, description, 1446
 picture, 5445
Cataract, of eye, how it is treated, 4298
Catbird, in Canada, 3495
Catch-ball, game, 1614
Catchfly, its family, 4111
Catch the salmon, garden game, 1072
Caterpillar, how it protects itself, 3416
 its life-story, 2983
 pictures, face 2982 in colour, 2984, 2985, 2987,
 2991
 why it turns into a butterfly, 4235
Catesby, Robert, and Gunpowder Plot, 1791
Catgut, comes from sheep, 380
Catharine, of Braganza, 1548, 3358
Cathcart, Earl, as governor, 1242
Cathedral, Christ Church, picture, 1163
Catherine, of Aragon, queen of Henry VIII.,
 Henry's treatment of her, 2534
 her portrait, 844
 home of her childhood, 3356
 legality of her marriage, 2708, 5946
 married Arthur, Prince of Wales, 842
Catherine, queen of Henry V., 2706
Catherine I., empress of Russia, 3630
Catherine II., the Great, empress of Russia,
 3630, 3748
Catherine of Württemberg, Princess, marries
 Jerome Bonaparte, 4910
Catherine Parr, queen, 846
Catherine, St., girl who defied an emperor,
 story, 1010, 5812
 picture, 1011
Catherine wheel, 1010
Cato, Marcus Porcius, called the censor, 416
 opposed Roman luxury, 5265
Catskill Mountains, good water in, 5115
Catspaw hitch, and picture, 3283
Catstall, grass, and picture, 2981
Cattaro, harbour, 2860, 3224; pictures, 2857
Cattle, different kinds, 375
 education of young, 5481
 pictures, 377, 385, 1240, 4571
 yards in Chicago, picture, 2659
Caucasus Mountains, in Russia, 3631, 3750
Cauld Lad of Wilton Hall, The, legend, 3648
Canliflowers, when to sow, 2971
Canstion, is universal, 5248
Caustic potash, how it is formed, 1799
Caustic soda, is an alkali, 1799
Cavaliers, followers of Charles I., 1888
Cave, how to make, with pictures, 5001
 Mammoth Cave, 583
Cave bear, lived in England, 49, 192
Cave-dwellers, African, 5569
 description, 6306
 picture, 6307
Cave men, 192, 618, 6306
Cavendish, Henry, life and portrait, 2113
Cave of Dogs, in Italy, 1787
Cavern of ice, in Hungary, 2860
Caviare, what it is, 201
Cavour, Count, worked to free Italy, 3024
Cawnpore, in the Indian mutiny, 1706

INDEX

Caxton, William, his life, 3570
 printed *The Canterbury Tales*, 3328
 printed the story of King Arthur, 867
 started printing in England, 756, 6024

Cecil, Robert, Earl of Salisbury: see Salisbury

Cecil, Wm., Lord Burleigh: see Burleigh

Cecilia, St., her life, and picture, 1014

Cedar, age of cedars of Lebanon, 62
 pictures, 3658

Cedar-birds, in Canada, 3494
 wings of, 5437

Celandine, greater, 2841, 4110

Celeriac, kind of celery, 3178

Celery, how to grow, 3176, 3726, 4353

Celestine V., pope who ran away, story, 459

Cell, in living creatures, 1003
 under the microscope, 1102
 what a cell is, 782

Cellar beetle, 3261

Cellini, Benvenuto, defending Rome, 5839
 examples of his work, pictures, 5838, 5839, 5840
 his life, 1223, 4954, 5837
 pictures, 4945, 4947, 5838
 sculptor, 4161
 statue of Perseus, 5838; picture, 5837

Celluloid, why it catches fire easily, 4823

Cellulose, what it is, 1004, 4823

Celts: see Kelts

Canis, Mont, its tunnel, 2392, 6203

Census, strange things it shows us, 2665
 of Canada, 3782
 what it shows of the growth of our country, 2420

Centaury, common, 4424
 picture, 4419

Centigrade, scale of temperature, 3671

Centimetre, a measure, 3671

Centipede, its life story, 3295; picture, 3297

Central America, 4381, 4386

See also Names of Countries

Central Asia, deserts, 108, 3072
 history and geography, 3931
 map, 3933
 people, 3931, 3933

Centre of gravity, how to find it, 3835
 of a boat, picture, 3335
 of a flat object, picture, 3839
 value in balancing, 6659

Centrifugal force, 2230, 3674, 3813

Century, what it means, 192

Cepheus, king of Ethiopia, 3314

Cerberus, dog of hell, 3314, 5164

Cerdic, and English kings, 4035

Cereals, grass plants, 2078, 2923

Cerebellum, what it is, and its duties, 3565

See also Brain

Chalk, calcium carbonate, 1669, 1798
 forms part of the earth's crust, 2887
 insoluble in water, 5250
 is turned into soil, 3339
 picture, 2619
 use in drawing: see Drawing
 where it comes from, 2335, 2619

Chamber of Deputies, 2399

Chameleon, life-story, 1221; picture, 1227
 why it changes colour, 2458

Chamfering, how to chamfer wood, 4561

Chamois, 382; picture, 381

Chamomile, 4417; picture, 4416

Chamounix glacier, picture, 2515

ChAMPLAIN, Samuel de, explores Canada, 262,
 founded Quebec, 539
 portrait, 217, 261
 statue in Quebec, picture, 2248

ChAMPLAIN, Lake, discovery of, 262

Chancel, Monsieur, invented match, 775

Chancellor, B., navigator, 845, 3626, 4722

Chandernagore, factory set up, 1702

Chantrey, Sir Francis, sculptor, 4162

Chapel, with mosaic, picture, 1991

Chapin, Deacon, the "Puritan" statue, 4848

Chapman, George, poet, 3330

Chapultepec, battle of, 1832

Chapultepec Palace, picture, 4391
 hill in Mexico, 4382
 taken by the United States, 4390

Character puzzles, 4350, 4458

Charades, 2253, 4351, 4458

Charcoal, keeps soil sweet, 1816
 made from hazel wood, 1965
 not a food, 2695
 use in iron and steel industries, 5538
 used to filter water, 2109

Charing Cross, London, its name, 2533

Chariot, from reels, and picture, 4352

Charlemagne, and his pupils, picture, 2067
 conquered the Netherlands, 3458
 emperor of the Holy Roman Empire, 3014
 fought against the Moors, 3354
 helped the Church, 2524
 his reign, 2064
 in Switzerland, 2964

Charles, king of Roumania, 3220

Charles I., king of England, farewell to his
 children, 5360
 his life, 1887, 5949
 his reign, 1022
 statue, 5013

Pictures of Charles I.

his children, 1886

leaving Westminster Hall, 1030

portrait, 1891, 1896

raising the standard at Nottingham, 1030

with his household on the river, 1886

Charles II., king of England, 5951

defeated at Worcester, 1025

given Bombay, 4036

his marriage, 1702, 3358

pictures, 1026, 4619

Charles III., king of France, 2065

Charles IX., king of France, his reign, 2070

Charles V., emperor of Germany, and Titian,
 picture, 1259

his dominions, 2527, 3356

his ideas of empire, 5498

his rule in the Netherlands, 3460

his struggles against pirates, 4260

war in Italy, 3020

Charles IX., king of Sweden, 3600

Charles XI., king of Sweden, 3596

Charles XII., king of Sweden, 3596, 3600

Charles XIV., king of Sweden, 3596, 3598

Charles the Bold, duke of Burgundy, 2966, 3460

Charles the Great: see Charlemagne

Charles, Thomas, as minister at Bala, 2549

Charles Edward Stuart: see Stuart

Charles Martel, drove back the Saracens, 2064

Charles O'Malley, story of the novel, with
 picture, 2903

Charles's Wain: see Great Bear

Charleston, founded, 523

naval attack, 986

palmetto fort at, 5440

pictures, 5984, 5989

resists capture, 2018, 2019

Charlottetown, capital Prince Edward Island,
 5604

INDEX

- Charybdis**, terrible whirlpool, 70, 4743
Chase, William M., art of, 4152
 picture by, 4158
Chatham, Earl of, 2384, 2710
 portrait, 2379; death, picture, 2381
Chats, birds, pictures, 2053
Chattanooga, Tenn., 5986
 picture, 5992
Chatterers, family of birds, 1747
Chatterton, Thomas, life and poetry of, with pictures, 5317
Chaucer, Geoffrey, father of English poetry, 752
 his life, 3327; picture, 3326
 poet, 94, 469
 wrote the *Canterbury Tales*, 437, 6019
Chebec, a flycatcher, 3490
Cheddar, cave, picture, 405
Checkerberry, description, 3052
Cheese, how microbes aid in making, 904
 how mites get into cheese, 3304
 its value as food, 2793
Cheese-box, making table from, 4667
Cheetah, fastest runner in the world, 6150
 fierce animal, 1846
 how captured, 6150
 made to serve man, 140
 picture, 136
 what kind of animal it is, 140
Chelifer, scorpion, picture, 3301
Chemical compounds, 1797
Chemical energy, what it is, 3552
Chemicals, and the soil, 3343
 why they have Latin names, 4235
Chemise, how to make a doll's chemise, and pictures, 577
Chemistry, cannot build up life, 4120
 chemistry of the stars, 2718
 difference between mixture and compound, 1040, 1665
 low temperature chemistry, 4051
 meaning of word, 1665
 of the body, 6015
 what it is, 339, 1869
Chemulpo, chief port of Korea, 363
Cheops: see *Chufu*
Chepman, Walter, printer, 3572
Chebourg, port of France, 2399, 2590
Cherokees, an Indian tribe, 17
Cherry, Andrew, wrote Bay of Biscay, 3740
Cherry, black, poisonous, 4490
 how it is formed, 2075, 4344
 how its fruit is made up, 4110
 pictures, 651, 3443, 4491
 wild red, 4490
Cherry-bird, 3494
Cherry gall, the home of an insect, 2460
Chesapeake, the, frigate, and Shannon, 1399, 2902
Chest, of the human body, 1580
Chestnut, American, 2836, 5628
 how it grows and its uses, 1966
 pictures, 1970, 3625, 3653, 5625
Chest of drawers, how to make from a match-box, 103
Chevre, Paul, statue of Champlain at Quebec, picture, 2248
Chewing, how necessary it is, 2206
Chibchas, South American tribe, 4504
Chickadees, in Canada, 3041
Chicago, description of, with pictures, 5513
 fire, of 1871, 5513
 picture, 5517
 stockyards, in picture, 2659
 World's Fair, 2418, 3538, 5513
Chickamauga, battle of, 2018
Chickweed, 3828
Chicory, picture, 4187
Chilblains, their cause, 2075
Child Charity, story, with picture, 1043, 1044
Child, The, who came by night, pictures, 5882
Childeric, captured Paris, 2318
Children, bequests of Charles Lounsbury, 5203
 boy (the) scouts of America, 3583
 boy (the) who died for the Republic, 5512
 child gazing at sunlight, picture, 3635
 Chinese, 5583
 clever deeds of, 5344
 Colonial, 941
 daughter (the) of King Charles, 5359
Children, first child born in America, 941
 how the children saved the town, story, 964
 Kafir children, stories told to, 5349
 little girls of long ago, 2711
 little princes in the Tower, 1980
 Mrs. Hemans, the children's poet, 5463
 partners, a story, 4959
 playing with globe, picture, 5281
 their education, 5284
 their food, 2700
 what New York City does for its children, with pictures, 3193
 why some things harm children, 4827
 why they are easily hurt, 4827
 why they require salts, 2638
 work of libraries for, 3199
Child Roland, story, and picture, 5081
Chile, added to Spain's dominions, 3356
 flag, picture in colour, face 1640
 its peace with Argentina, 4569
 its position, 4500, 4569
 was freed, 4506
Chilian sea-eagle, picture, 1839
Chillon Castle, 3125; picture, 2958
Chilodactyle, picture in colour, face 200
Chimera, a fish, 2446; picture, 2447
Chimes, The, the story of the book, and pictures, 2285
Chimney, helps to keep a room fresh, 1788
Chimney-pots, why needed, 5853
Chimpanzee, 602, 3076; picture, 603
China and Chinese, advanced on Central Asia, 3934
 astronomy is studied, 1655
 hatred of new ideas, 108
 history, 108
 how to reach China, 114
 in Hawaii, 2182
 life thought and religion of Confucius, 5579
 no milk used in China, 376
 people, 105, 116, 3974
 physical features, 106
 possessions of English in, 1879, 3932
 settled in Japan, 364
 stories from, 5344
 the Great Wall, 108
 the opening up of China, 112
 towns and industries, 114
 war with Japan, 368
Pictures of China
 boys' choir, 109
 dinner-party, 111
 Empress Tze-hsi, in colour, face 104
 festival of the Dragon-boat, 111
 flag, in colour, face 1640
 girls doing embroidery, 109
 Great Wall, 105
 maps, 107, 365
 road leading to emperors' tombs, 115
 tea-house in Shanghai, 111
 temple, 105
 woman with tiny feet, 109, 3108
China, how it is made, and pictures, 4477, 4479
 how to mend it, 4249
 made in France, 2396
China aster, picture, 5280
China tea, 3316
Chinchilla, 670, 2730; pictures, 671
Chinese lanterns, winter cherry, 1203
Chinese pink, 5270
Chinese school-books, stories told in, 6003
Chinook winds, in Canada, 5365, 5370
Chios, Island of, 3313
Chipmunk, why the chipmunk has black stripes, 1068
Chippendale, his book on furniture, 6125
 his work, 6123
Chippewa, battle of, 746, 1399
Chippy, the winter, 3492
Chiron, centaur, 185
Chisel, when to use it, and picture, 337
Chloride of mercury, how to make, 1668
Chlorine, a gas, 223, 1290, 1667
 in hydrochloric acid, 1797
Chloris, spirit of the flowers, 190
Chloroform, how it acts, 1005, 3236
 how its use was discovered, 4201
 made from marsh-gas, 1870
Chlorophyll, in plants, 2875, 4118
Chocolate, how it is made, and pictures, 2237
 how to make chocolate creams, 3512

INDEX

- Chocolate**, value as food, 3317
Chokeberry, description of, 5036
 picture, 5034
Choking, its cause and remedy, 1635
Chopin, Frederick, a story about him, 3427
 story of his life, 3250; portrait, 3243
Choregos, who they were, 5004
Chosroes II., Persian king, 3876, 3878
Christ Church, Newgate Street, London, picture of spire, 1163
Christchurch, New Zealand, 1460, 1464
Christian IV., king of Denmark, 2528, 3596
 statue in Copenhagen, 3598
 tomb at Roskilde, 3600
Christiania, capital of Norway, 3596, 3602
 picture, 3595
Christiania Fiord, in Norway, 3602
Christianity, adopted by Denmark, 3594
 American natives taught, 4384, 6025
 brought to England by St. Augustine, and picture, 429, 430
 disputes among Christians, 3156
 Finland converted, 3630
 flourished in Ireland, 432
 Goths became Christians, 3354
 honoured by Constantine, 534
 how the Eastern and Western Churches arose, 3150
 in Britain, 198, 2329
 introduced into England, 5524
 its spread, 2522, 3874
 persecution by Roman emperors, 530, 531, 534, 4946
 preached in Japan, 366
Christiansand, port of Norway, 3596
Christmas, a tale of Christmas Eve, and picture, 2142
 Christmas charade, 2253
 Christmas gymkhana, 2252
 poetry, and pictures in colour, 2149
 true story of Father Christmas, 2146
Christmas cards, how to use, 2871
Christmas Carol, story by Dickens, and pictures in colour, 2158
Christmas Day, world-wide celebration of, 4470
Christmas hymn, 4920
Christmas presents, how to choose, 4882
Christmas rose, 5270
 picture, 4284
Christmas-tree, for birds, and picture, 2251
Christopher, St., 1008; picture, 1009
Chromid, a fish, 2684
Chrysanthemum, a story of it, 1677
 how to make of paper, 4140
 pictures, 1817, 3730, in colour
Chub, a fish, 2681; picture, 2679
Chu-fu, king of Egypt, 4785, 5004
Chulhurst, Elizabeth and Mary, legend, 4277
Church, F. E., an artist, 4149
 picture by, 4155
Churubusco, battle of, 1832
Cibber, Colley: see Poetry Index
Cicada, locust, 3140; picture, 3133
Cicero, orator, 421, 5265; pictures, 419
Cid, The, fought against the Moors, 3354
Cilia, what they are, 1637
Cimabue, Giovanni, his life, 2780
 portrait, 2779
 taught Giotto, 4586
Cimbrì, defeated by Romans, 5265
Cincinnatus, his story, 5261
Cinderella, story, and pictures, 818
 written by Straparola, 1468
Cinematograph, what it is, 510
Cineraria seed, how to sow, 3514
Cingalese: see Singhalese
Cinnabar, in Canada, 5600
Cinquefoil, its family, 4110
 marsh, 5038; with picture, 5035
Cipher, secret writing, 4137
Circe, a witch, 70
Circle, degrees of a circle, 446
 making circles and filling them in, with pictures, 3428
Circus Maximus, at Rome, 5261
Citric acid, found in fruits, 1799, 4749
"City of Magnificent Distances", nickname of Washington, D. C., 1711
Civet, valued for its scent, 140; picture, 137
Civil Service, started, 3537
Civil War, in America, amendments to Constitution, 1593
 and Memorial Day, 4468
 brother's (the) war, 2007
 causes leading towards, 2007
 conditions producing, 1823
 conduct of, 2007
 emblems of S. Carolina, 5440
 North and South at the beginning of the, 2012
 note on, 3536
 See also Confederate States; Slavery; United States
Civil War, in England, 1024, 1887, 1888
Clamp, a store for vegetables, 4353
Clapperton, Hugh, 282; portrait, 283
Clare, John: see Poetry Index
Claremont, the real fairy of Claremont, story, and picture, 2733
Clarendon, Earl of, 523
 portrait, 519
Clarendon, Edward Hyde, Lord: see Hyde
Clark, William, member of Lewis' and Clark's expedition, 1396
Clarke, James Freeman, incited the Battle Hymn of the Republic, 2956
Claudius, emperor of Rome, 529; picture, 529
Clavichord, musical instrument, 3292
Clay, Henry, compromise concerning California, 3536
 helped to prevent war, 3535
 introduces compromise of 1850, 2008
Clay, how it is made, 407
 of Canada, 5600
 part of earth's crust, 2887
Clay cylinder, Assyrian, picture, 3399
Clay modelling, three things for, 5917
Clayton, Dr., coal-gas experiments, 655
Clayton, N. Y., position of, 5425
Cleaning, best way to clean things, 4456
 hot water as cleaner, 4230
Cleanliness, why it is necessary, 3146
Cleat, what it is, 1346, 1510
Clematis, different kinds, 5270
 pictures, 5269, 5276
Clemens, S.: see Twain, Mark
Clement of Rome, 2330
Clement VII., Pope, picture, 4947
Cleobis and Bito, story of, 1301, 2301
Cleopatra, and Antony, 421; picture, 5704
 conceals herself in a roll of carpet, 5705
 defeated by Romans, 5003
 education of, 5703, 5705
 her death, 5710
 influence on Cæsar, 5705
 last of the Ptolemies, 4792, 5703
 last queen of Egypt, 5703
 pictures, 5704, 5707, 5710
 story of the pearl, 5708
Cleopatra's Needle, its history, 5003, 5098
 not erected by Cleopatra, 5524
 pictures, 5009, 5099
 set up by Thothmes III., 4786
Clerk, brave clerk at Delhi, 1913
 Clerk's tale, in The Canterbury Tales, 437
 what a clerk did for the world, story, 4646
Clermont, the, steamboat, 2667
Cleveland, Frances Folsom, in White House, 392
 portrait, 387
Cleveland, Grover, administration, 3537, 3538
 as president, 2417, 2418
 picture, 3532
 protests against Weyler's conduct, 2184
Cleverness, and size of brain, 4596
Cliffden blue butterfly, picture in colour, face 2982
Cliff-dwellers, of the Southwest, 3683
Clifton Bridge, 20; picture, 26
Climate, the two classes, 1860, 4323
Climbing perch, with picture, 2682, 2683
Clinton, De Witt, and Erie Canal, 1826
 portrait, 1395
Clinton, Sir Henry, attacks Charleston, 986
 dealings with Arnold and André, 3812
 portrait, 981
 unaware of Washington's march, 992
Clintonia borealis, description, 2840
Clistheres, his daughter's suitors, 2301

INDEX

- Clive, Robert**, in India, 1094, 1704
Clock, cuckoo clocks, 2764
 Galileo's clock, 3549
 how it works, pictures, 1537
 how to make case, and picture, 4775
 how to tell the time, and picture, 1542
 the story of the clock, 1535
Clodion, Claude Michel, sculptor, 4162
Clogs, where the pattern came from, 2399
Cloister and the Hearth, The, story of the book, and pictures, 4017
Clondalkin, round tower of, 5462; with picture, 5467
Clot-bur, picture, 5188
Cloth, production of in U. S., 2662
Clothes-basket, a game, 2252
Clothes-moth, its life-story, 2992
Clothes-pegs, fighting clothes-pegs, how to make, and picture, 934
Clothing, how to make old clothes new, 3515
 its warmth, 682, 3381, 4340
 why it should be loose, 2074
Clouds, different forms of, and pictures, 3692
 do not make thunder, 1575
 how they stop sunlight, 3385
 made of water, 406, 917
 part of the earth, 4547
 shadows on hills, 1862
 their making and unmaking, 5022
 what it is like above the clouds, 3691
 when the sky is clear, 4826
 why they fall as rain, 4339
 why they have silver linings, 1774
Clough, Hugh: see Poetry Index
Glove hitch, and picture, 3283
Glove-pink, the carnation, picture, 5274
 the family, 4111
Clover, old-field, 4288
Clovis, founded France, 2064
 pictures, 2065
 was Childeric's son, 2318
Clumps, a game, 2137
Coaches, coach in the floods, picture, 193
Coaita, a monkey, 606; picture, 605
Coal, contains stored sunlight, 1267
 ferns turned into coal, 170
 forests that have become coal, picture in colour, face 798
 how coal is procured, pictures, 801
 how gases get into it, 2506
 how it was found, 4440
 how the forests were buried, 2798
 in Canada, 5600, 5601, 5607
 in Northwest Territories, 1918
 in West Turkestan, 3932
 its history, 799
 its price, 4746
 made by carbon, 1289
 microscopic view of section, picture, 799
 mines of, 10
 production of in U. S., 2660
 trees turned into coal, 49, 3073, 3542
 why it burns, 915, 2506
 why it is good for fuel, 3757
 used in engine, 1828
 used in iron and steel industries, 5538
Coal-gas, can it escape from gravity, 5849
Coal-mine, cause of explosions, 4319
 how it is reached, 800
 pictures, 800, 801
Coal-tar, its uses, 2507
 products manufactured from, 2664
Coamings, of a ship, 4565
Coastguard's work, pictures, 4430
Coasting, in Canada, 5209
Coast Range, in Canada, 5607
Coat, why it has back buttons, 5650
Cobalt, town, in Canada, 5600
 silver discovered in, 5599
Cobbler, and elves, story, and picture, 712
 cobblers and the cuckoo, tale, and pictures in colour, 2297
 merry cobbler and his coat, tale, and pictures in colour, 2372
Cobbler-fish, picture in colour, face 200
Cobden, Richard, and Bright, picture, 3705
 work as a reformer, 3703
Coblentz, bridge, picture, 30
 picture, 2749
 town, 2764
Cobra, how it kills, 1374
Cobra, pictures, 51, 1377
 various kinds, 1376
Cobweb, between twigs, picture, 734
Cochins, breed of fowls, 1513
Cochrane, Sir John, how his daughter saved him, 2803
Cock, picture, 1515
Cockatoo, a parrot, 1747; picture, face 48
Cockchafer, grubs, picture, 3261
 picture in colour, face 3140
Cock-fighting, 1514
Cock-of-the-rock, 1748; picture, 1736
Cock-of-the-Woods, a woodpecker, 3041
Cockroach, 3141; picture, 3147
Cocoa, beans, pictures, 2237, 2239, 2240, 3315
 cocoa-bean plantation, picture, 2238
 its manufacture, 2237
 its value as food, 3113
 why it is good for children, 3317
Cocoon, balls, how to make, 3512
 fibre for growing bulbs, 1816
 how its seed is carried, 3828
 how rope is made from it, pictures, 3993
 ice, how to make, 3518
 its growth and uses, 1966
 pictures, 1968, 2187
 the fluid inside, 1989
Cocoon ice, how to make, 3518
Codfish, its eggs, 201
 salting, etc., picture, 1241
 where caught, 202; picture, 203
Cod-liver oil, 202, 3601
Coffee, berries not properly named, 5524
 best way to make, 3317
 coffee plant, picture, 3315
 effect on the body, 3317
 not a food, 3113
 when first brought to Arabia, 6034
Coffer-fish, 210; picture, 209
Coffin-ships, 1574
Cohesion, 617, 684, 2880, 5847, 5851
Coho, a salmon, 3897
Cohosh, black, description, 5032
 picture, 5030
Coins, how money is made, pictures, 3617
 tricks with coins, and pictures, 98, 2355, 4034
 use of copper in coins, 1870
 why any coins are made of gold, 4342
 why their edges are milled, 3034
Coke, use in iron and steel industries, 5538
Colchester, a Roman city, 198
Cold, coldest place in the world, 3752
 coldest possible point, 4049
 contracts things, 1372
 hot things and cold things, 4047
 in the moon, 2226
 is absence of heat, 1774
 sense of cold, 1964
 stops the action of ferments, 4052
 why cold makes our hands blue, 5845
 why it is colder on a mountain-top, 776
 why our teeth chatter, 4439
 why some things are colder than other, 682
 why we shiver, 2232
Cold Harbour, battle of, 2019
Colds, loss of sense of smell, 3240
 where they come from and go to, 2508
 why we catch cold, 1963
 why we get hoarse, 2455
Cold storage, arrangement of, 3713
Cold water, three cups of, stories, 467
Cole, George Vicat, his picture, 2076
Cole, Thomas, life and art, 4149
Coleridge, Samuel Taylor, his life, 3908
 his life, 3908
 his mistake about the moon, 4116
 poems: see Poetry Index
 portrait, 3907
 story of, 3706
Coleridge, Sara: see Poetry Index
Collet, John, friend of Erasmus, 3156
Cole-tit, picture, 2217
Colic, what it is, 2346
Coliseum, last fight at, and picture, 626, 627
 what it was, and picture, 5268, 5267
 See Colosseum
Collar, how to make a braid lace, with pictures, 5352

INDEX

- Collar-bone**, in man, 2544
Colleges, in Canada, 5234
 Royal Military at Kingston, picture, 2245
 Upper Canada in Toronto, 5234; picture, 5237
 See also **Universities**
- Colleon Monument**, and its makers, 4161
 how it was built, and picture, 1254, 4165
Collie, shepherd's dog, 502
 story of Scottish collie, and picture, 4003, 6270
Collier, Hon. John, his picture, 220
Colliery head, picture, 799
Collingwood, the planter of oak trees, pictures, 6128
Cologne, its cathedral, 2752; picture, 2749
Colombia, flag, picture in colour, 1640
 foundation, 4506
 in South America, 4500, 4574
 products, 4574
Colombo, harbour of Ceylon, 1880
Colon, city on Isthmus of Panama, 4576
 may be cleaned by the U. S., 2190
Colonial Dames of America, instituted Flag
 Raising Day, 4487
Colonies, character of colonists, 2007
 children in, 941
 Continental Congress of 1774, 982
 difference in the character of the colonists, 879
 European in the United States, and their use
 to the mother countries, 977
 European legislation concerning, and taxation
 of, 978
 first permanent English colony in America, 514
 France in Canada, 535
 Little girls of long ago, 2711
 Russian in North America, 2178
 second Continental Congress, 984
 Spain in West Indies, 2184
 started by Walter Raleigh, 6131
 wives for settlers sent over, 514
 See also **America, Canada, Explorations, Mexico, United States, Wars**
- Colonna, Vittoria**, picture, 4947
Colorado, admitted, 3537
Colorado beetle, with picture, 3139
Colorado Cañon, picture in colour, face 836
Colosseum, how built, 5804
 in Rome, 5804
 kinds of plants found in ruins, 5804
 pictures, 5808
Colossus of Rhodes, statue, picture, 908
Colour, caused by waves of light, 156
 colour at night, 3977
 colours in painting: see **Painting**
 colours we cannot see, 3758
 difference in gaslight and daylight, 4339
 how colours vary, 4508
 how light is broken up into colours, picture
 in colour, face 2718
 how refraction produces colour, 5177
 light and colour, 5173
 seeing colours, 4507
 the piten of light, 5174
 what makes it in the fire, 5848
 why seen when eyes are shut, 3035
Colour blindness, what it is, 156, 4509
Colt, Samuel, as inventor, 2667
Colt's foot, description, 2836, 4614
 picture, 4608
Columba, St., a missionary, 430
 his life, 4708; picture, 4706
Columbia, burned, 2020
Columbia, Canadian province, 1247
Columbia River, discovery of, 1396
Columbia University, picture of, 5183
Columbine, 2840, 3736, 5270
 description of flower, 4339
 garden varieties, 5270
 picture, 4832
Columbus, Christopher, and Marco Polo's book, 55
 discovery at mouth of Orinoco, 4502
 found Haytians playing with rubber balls, 5677
 helped by Isabella of Castile, 2367
 his life, 56, 3016
 his map, 266
 mistook West Indies for India, 1877
- Columbus, Christopher**, monument in Barcelona, 3361
 pictures, 56, 57, 58
 sees America, with pictures, 5506
 statue of, 4848
 voyages of, 258, 4035, 4463
 what he said of Cuba, 4381
 what he said of the Bahamas, 1876
Columbus or Discovery Day, why celebrated, 4463
Columbus, the, war-ship, 2398
Combustion, what it is, 1195
Comedy of Errors, story of the play, 630
Comet, day of the, a story, 5509
 gets in the way of planets, 3095
 how it travels, 150, 152, 1948
 important comets, pictures, 2499
 Jupiter's influence on comets, 2423, 3095
 path round the sun, pictures, 152, 2497
 what comets are, 2495
 why the tail changes position, 2088
Comet, steamboat, 2472; picture, 2469
Comfrey, plant, its family, 4112, 4970
Cominius, Pontius, his brave deed, 3554
Comma butterfly, picture, 3411
Commerce and Labour, U. S. Department of, 1597
Commodus, emperor of Rome, 533
Common butterwort, with picture, 5030
Common sea reed, or beach grass, 1334
Commons, House of: see **Parliament**
Commonwealth, in England, 1025
Commune, in France, 2277
Como, Lake, in Italy, 3012
Companion, its real meaning, 229
Companion, of a ship, 4565
Company of the Hundred Partners, given
 monopoly of fur-trade in Canada, 538
Compass, compasses, pictures, 40, 333
 how to read, with picture, 5292
 how to use watch as, and picture, 4777
 why it bears a fleur-de-lys, 5650
 why it points north, 4438
Complexion, fair and dark people, 156, 1987
Composers, great composers, 3243
Composite family, in plants, 4112
Composition, in chemistry, 1194, 1665
Compounds, the making of, 1665
 See also **Chemistry**
- Compromise of 1850**, in relation to admission of
 California and slavery, 2008
Comte, Auguste, his teaching, 5249
Comyn, The Red, slain by Bruce, 3084
Conception, what it is, 5025
Concord, battle of, 983
Concorde, Place de la, description, 5335
Conde, Prince of, 1654, 3472
Condiments, effect on the body, 3315
Condor, bird, 1843; picture, 1841
Coney, is the hyrax, 995
Confederate States of America, money of, 2019
 organise a government, 2010
 reconstruction of, 2022, 2023
 See also **Civil War; United States**
- Confucianism**, what it means, with pictures, 5581
Confucius, his life and teaching, 2998, 3000, 4108, 5580
 pictures, 2995, 5582
 thoughts, life, sayings, etc., 5579
Conger eel, 2451, 2681; picture, 2449
Conglomerate, stone, with picture, 5197
Congo forest, in Africa, 3073, 3076
Congo River, 284, 3073, 4254
Congo State, belongs to Belgium, 4262
 children, picture, 4259
 flag, picture in colour, face 1640
Congress, Continental, appoints Marine or
 Naval Commission, 2397
 meets, 982
 the second Continental, 984
Congress, The United States, its powers, 1594
Congress, Trade and Labour, 4092
Conjuring, Afghan bands, 836
 ball that answers questions, 581
 boy conjurer's joke with audience, 936
 coin and handkerchief, 4034
 conjuring with matches, 3612
 how the conjurer makes his money, and pictures, 1508
 how to identify selected card, 4248

INDEX

- Conjuring**, imp with disappearing head, 3388
 magic tumbler, 2132
 magician's jacket, 1615
 mysterious Chinese bat, 1618
 mysterious disappearing penny, 4778
 pillars of Solomon, 2870
 self-suspending wand, 3174
 suspended penny, 4666
 tricks with English pennies, 4455
 wandering coin, 1926
 wizard of Wabasha, 4769
 wizard's wand and magic purse, 3068
- See also Tricks**
- Connaught**, story, 855
Connaught, Duchess of, portrait, 5431
Connaught, Duke of, governor general of Canada, 1248; picture, 5431
Connecticut, colony of, its history, 524
Connor, Ralph: see Gordon, Chas. W.
Conquers, garden game, 1072
Conrad, emperor of Germany, 1589
Conrad, of Montferrat, defied Saladin, 1589
Consequences, game, 2137
Conservation, of natural resources, 3538
Consonant, 2227, 4077, 4078
Constable, John, his picture, Salisbury Cathedral, 4593
 painted landscapes, 4587
Constable, the brave constable of France, story, 2806
Constance, Lake, 2960
Constantine the Great, as emperor, 5321
 founded Eastern Empire, 5268
 leading his troops, picture, 526
 Roman emperor, supported Christianity, 534
 took the bronze horses from Rome, 3018
 took Byzantium, 3150
 war with the Persians, 5066
Constantine XI., niece married Ivan III. of Russia, 3626
 Roman emperor, defeat by Turks, 3156
Constantine, Arch of, picture, 5012
Constantinople, capital of Byzantine Empire, 534, 1588, 3012, 3150
 sacked by Crusaders, 3154
 taken by the Turks, 3154, 3380, 5268
 what it is like, 3224
- Pictures of Constantinople**
- capture by Crusaders, 3155
 capture by Turks, 3155
 Galata Bridge, 3221
 Golden Horn, 3149
 mosques, 3223
 view of city, 3221
Constantinople, Patriarch of, 3150
Constantinus Chlorus, marries and divorces Helena, 5321
Constellation, what it is, 2507
- See also Stars**
- Constellation, the**, and La Vengeance, 2900
 and L'Insurgent, 2900
 figurehead of, 4841
Constitution of the United States, disagreements when made, 2007
 making of the, 1389
 thirteenth amendment passed, 2022
 what it is, 1594
Constitution, the, and La Guerrière, 1398; with picture, 2901
 and the Java, 2902
 built, 2900
 takes the Cyane and Levant, 2901
Constitution Island (in Hudson R.), owned by father of Susan Warner, 2046
Constitutional Union Party, 2010
Consumption, its cause, 906, 2800
 microbe discovered by Koch, 907
 why it is so common, 906
Contentment, the benefit of it, 5170
Continents, continent under water, picture, 3007
 names of, 5955
 taper off to the south, 3006
 what they are, 3004
Conundrums, in verse, 3029
Convention, ruled France, 2272
Converter, Bessemer, with pictures, 5540, 5548
Convict, and the mouse, story, 499
Convolvulus, picture, 3322
 sea, picture of, 5191
- Cook, Captain James**, at Tutuila, 5715
 discoveries and death, 1458
 explored New Zealand and Australia, 354
 founded Botany Bay, 1356
 pictures, 352, 1458, 4725
 set limits to Antarctic region, 4730
 visited Hawaii, 2181
 voyage to America, 2178
 voyages to Pacific islands, 1879
Cook, Dr., and North Pole, 5214
Cook, Eliza: see Poetry Index
Cooke, Sir William, work in telegraphy, 4316
Cookery, class, picture, 3109
 why we cook food, 1056, 3048
Cookstown, town in Queensland, 1466
Coon, name for raccoon, 864
Cooper, J. F., his book, Last of the Mohicans, 177
 life, 1476; portrait, 1475
 trial of the spy, an extract, 4281
Cooper, Peter, note on, 4309
Cooper Union, picture, 4309
Coot, a bird, 1951; picture, 1950
Copenhagen, battle of, 3596, 4360
 capital of Denmark, 3598
 meaning of name, 3595
 picture, 3595
Copernicus, crater in the moon, 2224
Copernicus, Nicholas, discovered movement of planets, 1942, 1943
 his life, 1656
 portrait, 1655
Cophetua, King, and beggar-maid, 822
 picture, 823
Copley, John Singleton, life and art, 4147
 picture by, 4153
Copper, in Canada, 5599
 production of in U. S., 2660, 2664
 Rio Tinto mines, 3360
 used to carry electricity, 1294
Copper Island, Behring Sea, picture, 2731
Coprolites, what they are, 854
Copts, Egyptian Christians, 4256
Copying, simple apparatus, 1287
Coral, how coral grows, picture, 2341
 how it is made, 2336
 the various kinds, pictures, 2334, in colour, face 2334
Coral Islands, 919, 1876; picture, 919
Coral snake, with picture, 1378, 1379
Corcoran, W. W., brought J. H. Payne's body from Tunis, 2954
Corday, Charlotte, arrest, picture, 4061
 killed Marat, 2274, 4062
Cordilleras, Andes mountains, 4573
Cordite, its explosive power, 5857
Cordova, its cathedral, 3361
 town in Spain, 3352
Cordova, Treaty of, 4388
Cords, vocal cords, 5644
Corelli, Marie, novelist, 3740
Corinth, battle of, 2016
 taken by the Romans, 5130
Corinth Canal, picture, 5014
Corinth, Isthmus of, 5121, 5120
Coriolanus, his story, 5261
Coriscrown, game, and pictures, 5113
Cork, keeps water out, 683
 legs not made of, 5524
 specific gravity, 3816
Cormon, Ferdinand, his picture, 5127
Cormorant, bird, can be tamed, 1951
 catches fish, 1522
 how the sheathbill robs it, 1626
 pictures, 1522, 1744
Corn, fields in France, 2396
 most valuable crop in United States, 2420
Corn bunting, lives in the fields, 2639
Corncrake, a bird, 1958
Cornelia, mother of the Gracchi, 416, 2632
Cornell, Ezra, laid a cable, 2474
Cornflour, as a food, 2926
Cornflower, description, 4289
 how to prevent flowering, 1074
 how to treat plants, 1350
 pictures, 1350, 4284
 why Germans wear cornflowers, 1677
Corn-Laws, abolished, 2386
Corns, what they are, 3973

INDEX

Cornwall, Barry, his real name, 704, 4526
poems: see Poetry Index
Cornwall, tin mines, 194
Cornwallis, Lord, surrenders, with picture, 992, 993; portrait, 981
Corolla, of a flower, 4110
Corona Borealis, group of stars, 2610
Coronado, exploration of, 260
Coronium, in sun's corona, 2088, 5023
Corophium, sea animal, 2587
Corpse-plant, 3053
Correggio, Antonio, his picture, *The Birth of Jesus*, 761
painter, 758
portrait, 759
Corsairs, pirates, 4260
Corsewall Point Lighthouse, picture, 4427
Corsica, island, 2398, 5264
Corso, in Rome, 5812
Cortereal, Gaspar, voyage to Labrador, 535
Cortes, conquest of Mexico, 269, 4382
portrait, 261
Corundum, in Canada, 5600
Corunna, battle of, 3360, 3362
Cosmic dust: see Sky dust
Cossacks, picture, 3629
rebelled in Catherine's reign, 3631
who they were, 3628
Cost and value of diamonds, 1570
Costa Rica, flag, picture in colour, 1640
independent republic, 4392
Coster, Lourens Janszoon, printer, 3568
Cotillon, how to dance, 2252
Cotinga, bird, picture, 1736
Cotton, Major Powell, in Africa, 5569
Cotton, Mrs. Powell, picture, 5569
Cotton, amount produced by United States, 4808
cotton field and cotton mill, 5988
grass, with picture, 5037
growth and manufacture, with picture, 4807, 4808
how chalcid fly saves plant, 3258
how weather affects it, 2328
through microscope, picture, 2325
valuable crop in the United States, 2422
Cotton-gin, invented by Whitney, 4807
invention of, 1825, 2667, 3533
Cottonian manuscripts, 1162
Cotton-thistle, what it is like, 5271
Couch grass, picture, 1333
Coughing, a kind of expiration, 1638
Council, Trade and labour, 4091
Countess, the heroic countess, story, 3883
Countess of Scarborough, the, and the Bon Homme Richard, 2898
Counting, child's counting rhyme, pictures, 490
why people count in tens, and picture, 1985
Countries, how the countries got their names, 5955

COUNTRIES

Child's Book of All Countries

The following are actual headings of the chapters in this section: the separate entries appear below, and in their proper places in the index.
A little mountain land, picture, 6257
Africa outside the British Empire, 4251
among the snow-capped Alps, 5669
Australia, the great south land, 1355
Austria-Hungary, 2851
Babylonia and Assyria, 4971
brave little Finland, 5933
Canada, the wonderland, 211
Empire (The) of Eternal Sun, 4035
England in the long ago, 191
fighting for the crown, 747
Finland, pictures, 5933, 5935, 5936, 5937
first holiday in Paris, 5331
France as it is to-day, 2391
France in the revolution, 2267
Germany as it is to-day, 2747
great sights of Egypt, the, 5813
Holland and Belgium, 3455
India, how it became an Empire, 1699
India, the pearl of the East, 1545
Italy, the land of romance, 3011
Japan and Korea, 363
land of a thousand years, the, 5711

Countries, life in Australia to-day, pictures, 5765
little brown children, the, pictures, 5774
Mexico and Central America, 4381
month in Ireland, 5469
New Zealand, the beautiful dominion, 1459
Norway, Sweden and Denmark, 3591
outposts of the British Empire, 1875
peoples of the desert, the, 6029
Persia and Asiatic Turkey, 3873
Russia as it is to-day, 3745
South America of to-day, 4567
Spain and Portugal, 3351
Switzerland of the snows, 2959
the Balkan Peninsula, 3149
the beginnings of France, 2063
the beginnings of Germany, 2521
the British Empire in Africa, 1765
the Chinese Empire, 105
the end of a long struggle, 1093
the founding of the nation, 427
the glory that was Greece, 5121
the grandeur that was Rome, 5259
the heart of Asia, 3931
the history of South America, 4497
the Land of the Rising Sun, 5557
the making of Germany, 2575
the making of Russia, 3623
the rise and fall of Persia, 5057
the scattered nation, 6217
the times of the Stuarts, 1021
the times of the Tudors, 841
the world around the Poles, 4719
Turkey and the Balkans, 3219
what I saw at Pompeii, 6137; in Rome, 5801
See also United States, and names of individual countries
Country, people's sight, 4602
country scenes, pictures, 3888
how its area is measured, 5248
why healthier than town, 2874
Couplet, what it is, 343
Coureurs des bois, the "wood-runners," 5147
Court, J., his picture, Mark Antony, 2917
Courts, the United States, description, 1597
Cousin, Jean, sculptor, 4162
Covenanters, persecution of, 5615
service of, picture, 1761
Coventry, helped by Lady Godiva, 5386
Cow, how it makes its milk, 1573
its life story, 376, 2238
picture, 249
simple way to draw a, 5666
the white cow, legend, 2744
Cowbird, habits of, 3042
Cowboys, 216
Cow-bane: see Water hemlock
Cow-catcher, of an engine, 375
Cowpens, battle of, 992
Cowper, William, his life, 3905
pictures, 1999, 3905, 3907
poems: see Poetry Index
wrote hymns, 2000
Cowries, shells, picture, 1417
Cowslip, description, 4614
flowers, picture, 4608
See also Marsh Marigold
Cow-wheat, lives on other plants, 3830
Coypu, animal, 668; picture, 675
Crab, and her mother, fable, 3062
greediness, 1411
how it leaves its shell, 2329
life-story, 2583
lives in sponges, 2340
pictures, 51, 1416
various kinds, 2584, 2586
Crab-apple tree, 3445; picture, 3445
Cracow, old capital of Poland, 2853
Craddock, Charles Egbert: see Murfree, Mary N.
Cradle, a kind of scythe, 2668
Craik, Mrs., life, 2599; portrait, 2593
Crait, family of snakes, 1378
Cramp, its causes, 3972
Cramp, used in picture-framing, 1924
Cranberry, 4112; description, 5038
Crane, and wise crab, fable, and picture, 4224
how it differs from the heron, 1954
length of life, 2328
various kinds, with pictures, 1957

INDEX

- Crane**, wolf and crane, fable, 377
Cranesbill: see Geranium, wild
Cramer, Thomas, arranged Book of Common Prayer, 845
 his death, with picture, 5069, 5070
Crassus, a wealthy Roman, 420, 5265
Crater, what it is, 5, 3229
Crawford, F. Marion, son of Thomas Crawford, 4842
Crawford, Thomas, sculpture of, 4842
Crayfish, 2586; picture, 2585
 protection of young, 5479
Cream, best form of fat for children, 2699
 separating from milk, picture, 1154
 why a good food, 2793
 why it forms on milk, 4340
Creation, described on Assyrian tablets, 4981
 Gustave Doré's picture of, 6103
Cressy: see Cressy
Creek Indian War, in Alabama, 1399
Creep, brown, 3042
Creeping jenny, plant, 4112
Creeping soft grass, picture, 1338
Creeping wheat, picture, 1333
Cremona, manufacture of violins, 1015
Creoles, in South America, 4505
Creon, king of Thebes, 441
Creosote, poisons microbes, 1988
Cress, grown without soil, 2563
 pictures, 2563, 2564
 when to sow, 2971
Cressy, battle of, 750, 2576, 2704
Crested dogstall grass, with picture, 1335
Crested wren, egg of, picture, 1744
Cretaceous layer of the earth, 2887
Crete, early civilisation, 4196
 flag, picture in colour, face 1640
 palace discovered, 5122
 settlement formed by Spartans, 5124
 taken by the Venetians, 3154
Crevasse, in glaciers, 2960
Crewel stitch, with picture, 4996, 4997
Cricket, different kinds, 3141
 little boy and the, story, 2304
Cricket on the Hearth, extract from, 5508
 story of the book, and picture, 2288
Crimea, annexed to Russia, 3631
Crimean war, Florence Nightingale's work, 561
 the campaign, 1098, 3632
Crinkleroot, or toothwort, 2841
Crispin, St., patron of shoemakers, 1013
Cristofori, B., made first piano, 1015
Croatian, name left by early colonists at Roanoke, 6135
Crochet, how to crochet, and pictures, 1348
 how to make a shawl, and pictures, 5107
 how to make crochet purse, 4023
Crocker, Thomas, wrote fairy tales, 1471
Crocodile, its use, 51
 life-story, 1221, 2327, 2328
 pictures, 51, in colour, face 48
 stories about, 5730
Crocus, garden varieties, 5272
 how to treat crocuses, 1610
 its family, 5272
 what to do with its leaves, 573
Croesus, king of Lydia, Æsop visited his court, 2910
 defeated by Cyrus, 5058
 story concerning, 5312
 the question he asked of Solon, story, 1301
Crofts, Ernest, his picture of Napoleon, 3503
Cromwell, Oliver, his life, 1888
 how Charles II. treated his body, 4640
 procured cheap coal for poor, 800
 ruler of England, 1025
 story of his little granddaughter, 4336
- Pictures of Cromwell**
 body dug up, 4641
 Cromwell listening to Milton, 3335
 dissolving Long Parliament, 1023
 his watch, 5165
 on battlefield of Dunbar, 1023
 on horseback, 1890
 portrait, 1896, 5949
 statue, 4168
Cromwell, Richard, called Tumbledown Dick, 1892
 his short rule, 1026
- Gromwell, Thomas**, his life, 2330; portrait, 2379
 statesman, 844
Crookes, Sir William, 2923
Croquet, how to play, and pictures, 4451
Crosby, Frances Jane, wrote hymns, 1998
Cross, a Celtic, picture, 5459
 seen by Constantine in a vision, 5322
Cross-ball, game, 1614
Cross-bearer, family of plants, 4110
Crossfish, a starfish, 2342
Crossing-sweeper, story, 1796
Cross-stitch, work in, 5529
Crow, and pitcher, fable, and picture, 3508
 fox and, fable, and picture, 463
 its habits, 1848, 3042
 length of life, 2328
 pictures, 1847
Crowe, Eyre, his picture of "Defoe in the pil-lory, 1729
 his picture of Horrocks watching the transit of Venus, 1661
 his picture of Whitefield preaching, 3701
Crowfoot, chief of Blackfoot Indians, 4578
Crowfoot: see Buttercup
Crown Colonies, what they are, 1880
Crowned crane, and picture, 1957, 1958
Crown imperial, plant, 1203
Crown knot, with picture, 236
Crown Point, captured, 984
Crowther, Samuel, bishop, life, 2914
 portrait, 2909
Crusades, capture of Constantinople, picture, 3155
 Constantinople sacked, 3154
 crusaders fought against the Moors, 3354
 preached in France, 2066
 preached in Switzerland, 2964
 their cause, 3878
 their object, 1493
 Urban preaching, picture, 1586
 what they were, 596
Crustaceans, what they are, 2583
Crying, may be good or bad for us, 4746
 why a lump rises in the throat, 4602
Crying, why we cry when hurt, 424
- See also Tears**
- Crying proverbs**, game, 5202
Ctesiphon, taken by the Persians, 5066
Cuba, authority of United States over, 3360
 discovered by Columbus, 58
 flag, picture in colour, 1640
 lies south of the Bahamas, 1877
 history, 2184
 war in, 2188, 3538
 what Columbus said of it, 4381
Cubes, the mysterious cubes, a puzzle, picture, 6068
Cuckoo, frightens other birds, 3415
 lays its eggs in nest of other birds, 1960
 picture, 1960
 varieties in Canada, 3488
 what kind of bird it is, 1958
 when it migrates, 2210
Cuckoo-bread, or -meat, is the sorrel, 3052
Cuckoo-flower: see Lady's smock
Cuckoo-pint, 4609
 picture, 4608
Cuckoo-spit, 3139
Cucumber, king of the cucumbers, picture, 1344
 percentage of water, 1169
Cucumber-root, Indian, 3053
Cudgel, how to play it, 3614
Culebra Cut, in Panama Canal, 5632
Culebra Pass, in Isthmus of Panama, 4392
Cumberland, Roman wall, picture, 199
Cummins, Maria Susanna, life, 2044
Cunaxa, battle of, 5064, 5076
Cuneiform writing, 4972
Cunningham, explored Australia, 356
Cunningham, Allan: see Poetry Index
Cunningham, William, said to have ill-treated Nathan Hale, 3812
Cunny Rabbit, and the lion, story, 461
Cunore, story from, 4936
Cup, how made, and pictures, 4477, 4479
Cup and ball, how to make, 6068
Cupid and Psyche, story, and picture, 1902
Cupping, dry, how it is done, 1575
Cura, Villa de, in Venezuela, 4503

INDEX

Curohod, Suzanne: see Necker, Madame
Curfew, its origin, 3025
Curie, Monsieur, found radium, 640
Curiosity, its importance in life, 5132
Curius Dentatus, and his refusal of a bribe, with picture, 2002
Curlew, bird, 1958; picture, 1959
Curlew, in Canada, 5210
Currant, dried currants are raisins, 642
 its family, 4112; pictures, 651
Currant-bud mites, picture, 3297
Current, in the sea, 1058
Curtains, how to decorate muslin curtains, with pictures, 5198
Curtiss, Glenn H., aviator, 164, 6082, 6086
Curtis, Marcus, his sacrifice, 2301
Curzon, Lord, adventure with a tiger, 139
Cuscuta, animal, 862
Cushion-cover, how to make, 3286
Custer, General, massacre of, 3537
Cuthbert, describes Bede's death, 4336
Cuts, how to treat, 5110
Cutter, ship, what it is like, 3914, 3913
Cuttings of plants, how to pot, picture, 1350
 how to treat, 572, 1350
Cuttlefish, 2452; pictures, 51, 2450
Cuvier, Leopold Christian, his life, 852
 pictures, 851, 858
Cuzco, capital of the Incas, 4504, 4574
 Cuzco Indian, picture, 4503
Cyaxares, king of Media, 5057
Cycle tire, how to mend, 4249
Cyclic changes, what they are, 2279
Cyclops, one-eyed giants, 69, 5004
Cymric, language of the Celts, 469
Cynic, Socrates' story of a cynic, 6165
Cyprus, how it was cleared of locusts, 3141
 settlement formed by Spartans, 5124
 useful as watch-tower, 1876
Cyrus the Great, 5172
 fought against his brother, 5064
 his conquests, 5057
 his tomb, 5065
 story concerning, 5312
Cyrus the Younger, 5076
Cythera, the embarkation for the Isle of
 Cythera, Watteau's picture, 4594
Czechs, settled in Bohemia, 2852

D

Dace, a fish, 2681; picture, 2679
Dacians, who they were, 5263
Dacres, Captain, commander of La Guerrière, 2901
Daffodil, a bulb root plant, 573
 description, 4610
 how to arrange in a vase, 578
 how to make paper daffodils, 4141
 in gardens, 5272
 petticoat hoop daffodil, 1610
 picture, 4613
Dagger moth, picture, 3413
Dagmar, princess of Denmark, 3598
Dahlia, how it should be treated, 1817, 3726
 must be staked, 3514
 picture, 1817
 preserving from earwigs, 1509
 when to plant, 830, 3398
 when to take it up, 4462
Daisy, awake and asleep, picture, 1264
 painting a daisy, with picture, 2894
 petal, through the microscope, 2321
 the various kinds, pictures, 4108
 what it is like, 3952, 4112
 when to sow, 719
Dalai Lama, chief priest of Tibet, 3938
Dale, Sir Thomas, as governor, 514
Dalecarlia, district in Sweden, 3600
Dalhousie, Lord, recalled, 746
Dalmatia, Austrian province, 2860
Delou, Jules, influence as a sculptor, 4162
Dalton, John, discovered atoms, 1372, 1666
Daltonism, colour-blindness, 4509
Dalton Mill, the giant of, legend, 465
Dam, at Assouan, 5399
 across Esopus Creek, 5115
 for irrigation, at Bassano, picture, 2265

Dam, of a reservoir, pictures, 2104
Damascus, city in Syria, a seat of the caliph's court, 3878
 oldest city on earth, 6038
Dame's violet, picture, 5280
Damien, Father, lived in Molokai, 2182
 work among lepers, with picture, 65; portrait, 66
Damon, his friendship with Pythias, 626
Dampier, William, explorer, 354, 1355
 picture, 354
Dampness, why it makes us ill, 3378, 4595
Danae, the mother of Perseus, 1049
Danby, Earl of, tried to bribe Marvell, 4557
Dancers, a warning to dancers, tale, 2301
Dancing Bear, a rock, picture, 1059
Dancing madness, 3303
Dandelion, how it spreads its seed, 3829
 how the flower is made up, 3952
Danelaw, where the Danes lived in England, 2701
Danes, the Dane who gave water to his enemy, 468
 in England, 430, 432, 2701
 See also Vikings

Daniel, explained writing on the wall, 4984
Daniell battery, 1076; picture, 1075
Danish names, in England, 432
Dante, how Giotto painted his portrait, 2780
 life and writings, 5219
 lived in Florence, 3018
 portrait, 5217
 work illustrated by Botticelli, 4950
Danton, Georges Jacques, leader in the French Revolution, 1142, 4062
 portrait, 4063
Danube, river, famous Iron Gate, 5718
 its course, 2764, 2851, 2856, 3222, 5712
 picture, 5711
Danzig, town in Germany, 2750
D'Arblay, Madame: see Burney, Fanny
Dardanelles, a strait, 3149, 5062, 5172
Dardanus, the founder of Troy, 3314
Darien, Isthmus of, reached, 4464
Dare, Virginia, 941, 6134
Dare County, N. C., who it is named for, 6134
Darenth, river in Kent, 200
Dariel Pass, Russia, its road, 3750
Darien, Gulf of, its position, 4502
Darius I., king of Persia, his reign, 5058
 made war on the Greeks, 1700, 1803
 palace at Persepolis, pictures, 5057, 5063
Darius II., king of Persia, his reign, 5064
Darius III., king of Persia, flight at Issus, picture, 5059
 his reign, 5065
 routed, 1306
"Dark (The) and Bloody Ground," 1820
Darkness, before dawn, 4235
 fear in the dark, 2674
 light and darkness together, 3092
 sight in the dark, 153
 size of dark and light things, 3382
Darling, Grace, 1733, 1738
 picture, 1735
Darling River, in Australia, discovery, 356
Darlington, first railway, 614
Darn, how to darn, and picture, 3515
Darnley, Henry Stuart, Lord, husband of Mary Queen of Scots, 846, 3088
Darter, a bird, 1951; picture, 1950
Darwin, Charles, discovery about worms, 3255
 discovery of fossil mastodon, picture, 850
 evolution theory, 855
 his life, 856
 his search for truth, 5029
 method of study, 4511
 on animals' maternal instinct, 5133
 on Scotland and Wales, 3228
 on unwise people, 4119
 opinion on speaking and singing, 4073
 portrait, 851
 proved that birds carry seed, 2210, 3828
 told of coral islands, 919
 tried if plants could hear, 3539
 wrote The Origin of Species, 2883
Darwin, Mount, in Tierra del Fuego, 4500
Darwin, Sir George, discoveries about tides, 2280, 4342

INDEX

- Darwin, Sir George**, on the earth's speed, 4822
on the moon's distance from the earth, 2226
- Daskam, Josephine Dodge**: see Bacon, Mrs. J. D. D.
- Dasyure**, a marsupial, 862; picture, 865
- Date**, 642
chief food of the Arabs, 6034, 6037
picture, 647
- Date-line**, its use, 678
- Daudet, Alphonse**, his book, *Tartarin in the Alps*, 4655
his book, *Tartarin of Tarascon*, 4537
- D'Aulnoy, Madame**, her fairy tales, 1467
- David**, friend of Tigliath Pileser, 4977
statue by Michael Angelo, 4952
- David I.**, of Scotland, reign, and picture, 3080
- David II.**, king of Scotland, 3084
- David, St.**, the fairies of, story, 2608
- David Copperfield**, book by Dickens, 2314
story of the book, and pictures, 2827
- Da Vinci, Leonardo**: see Leonardo da Vinci
- Davis, Jefferson**, his home in Richmond, picture, 5987
birthday, celebrated in South, 4466
captured, 2022
orders attack on Ft. Sumter, 2012
president of the Confederacy, with picture, 2010, 2011, 4466
- Davis, John**, explorer, 4722
explored America, 267
- Davy, Sir Humphry**, discovered laughing gas, 1196
discovery of electric light, with pictures, 654, 657
experimenting with light, picture, 654
helped Faraday, 2119, 4314
invented the safety-lamp, 1871, 4319, 5787
made electric light, 657
portrait, 4313
thought gas could not be used, 394
- Dawlish**, parson and clerk, legend, 1983
- Dawson City**, in Canada, 216
- Day**, 4463
getting longer, 37, 2281
meaning of day and night, picture, 78
story of the days, 83
where it begins, 677
See also Holiday
- Day-fly**: see May-fly
- Dead-leaf butterfly**, 3414
pictures, 3831
- Dead-nettle**, red, picture, 4290
white, description, 4292
picture, 4290
- Dead Sea**, in Palestine, 3874
one cannot sink in it, 1993
why fish cannot live in it, 5793
why we cannot sink in it, 5793
- Deaf and dumb language**, with picture, 5291
- Deafness**, effect of loud noises, 2458
- Dearborn, Henry**, to attack Montréal, 746
- Death**, disease its cause, 2622
should not be feared, 4745
the man who carried death, story, 3739
the men who went to kill death, *Canterbury Tale*, 440
why there is death, 2623
- Death adder**, lives in Australia, 1378
- Death-cup**, in poisonous mushrooms, 4753
pictures, in colour, face 4750
- Death's-head moth**, enters bee-hives, 2826, 2993;
picture in colour, face 3140
- Death-watch**, insect, 3142; picture, 3147
- Debreczin**, Hungary, 5713
- Decatur, Stephen**, at Tripoli, 2900
in command of the "United States," 2902
picture, 2899
- Deccan**, its progress, 1700
the southern half of India, 1546
- December**, how it got its name, 4521
- Decimal system**, what it is, 1985
- Decimetre**, a tenth part of a metre, 3671
- Decius Mus, Publius**, how he gave his life for Rome, and picture, 2630
- Declaration of Independence**, committee, portraits of, 987
writing the, 986
- Decomposition**, its meaning, 1194, 1665
- Decoration Day**: see Memorial Day
- Deeds**, why we do things, 5131
- Deer**, behaviour of fawns, 5479
- Deer**, deer-forests not forests, 5524
how the cheetah hunts them, 140
how the lion hunts them, 132
how they are attacked by eagles, 1840
pictures, 51, 381
the various kinds, 382
- Deerfield**, massacre of, 880
- Defoe, Daniel**, his book, *Robinson Crusoe*, with pictures, 1231, face 1725
his life, 1726
in the pillory, picture, 1729
plague-stricken (the) home, an extract, 5596
- Deland, Mrs. Margaret**, sketch of work, 2049
- Delaware**, colony of, 521
slave-state, 2010
stays in Union, 2012
- De la Warr, Lord**, as governor, 514
- Del Cano, Sebastian**, the first man to sail round the world, and statue, 60
- Delft**, old town of Holland, 3458
- Delhi**, famous old city of India, 1548
occupied by the Sepoys, 1913
where the Turks reigned, 1700
- Della Quercia, Jacopo**, a sculptor, 4161
- Della Robbia, Andrea**, an artist, 2790
- Della Robbia, Giovanni**, an artist, 2790
- Della Robbia, Luca**, his life, 2790
his picture of five singers, 2149
modelled figures, 4161; portrait, 2779
- Delphi**, oracle, 413, 550
- Del Piombo, Sebastian**, life, 4954
- Delta**, how it is made, 4826
- Demavend, Mount**, in Persia, 3881
- Demeter**, a goddess, 5126
- Democrats**, first called Republicans, 1394
party division, 2010
- Democritus**, and Hippocrates, picture, 3163
his search for truth, 3162
- Demosthenes**, his life, 1304, 5130
his statue in Rome, 5812
- Dendera**, temple: see Hathor's temple
- Denmark**, became independent, 3596
flag, picture in colour, face 1640
history and geography, 3591
how it got its flag, 1640
how to reach it from England, 3598
lost Schleswig and Holstein, 2579
map, 3601
royal council abolished, 3596
royal family's influence on Europe, 3598
- Denmark Monument**, its pictures, 3598
- Denny, William**, built steamboats, 2472
- Density**, what it is, and pictures, 542, 685
- Dentine**, part of a tooth, 2099
- De Quincey, Thomas**, his life, 4634
pictures, 4675, 4685
- Derby, Charlotte, Lady**, how she defended Lathom House, and picture, 4718, 4716
portrait, 4718
- Dermis**, a layer of the skin, 1910
- De Ruyter, M. de**, fought against the English, 3463
portrait in Ryks Museum, 3464
- Derwentwater, Lake**, picture, 5017
- Descartes, René**, his wooden daughter, 3210
portrait, 4625
what he did for science, 4620
- Desert**, a caravan, picture, 6033
a desert made fertile, picture, 2419
crossed by camels, 276
desert, picture, 408
forests and deserts, 3071
how it is made, 3072
how to journey there, 6030
its inhabitants, 6030
life in the Painted, 3589
mirage, pictures, 5013
of a red colour, 3073
pictures, 6031
the world's great deserts, 6029
- Designs**, card that helps us make, 5450
designs made from coins, picture, 3919
simple ways of making, 3919
- Desman**, shrew, 674; picture, 673
- Desmodus**, a bat that attacks cattle, 736
- De Soto, Hernando**, 260; portrait, 261
- Dessert**, the world on a dinner-table, story, 5206
- Determinants**, in a plant, 4442
- Detroit**, capture of, 746, 1398
- Detroit, the**, a ship, 4279

INDEX

Devil-crab, 2584
Devil-fish, the cuttle-fish, 2452
Devil's coach-horse, the rove beetle, 3263
Dewar, Sir James, his work with liquid air, 1194, 4050
Dewdrop, on spider's web, picture, 306
 what it is, 304
Dewey, Commodore, battle in Manila Bay, 2184
Dewing, Thomas W., art of, 4152
Diagonal, what it is, 3835
Diameter, its meaning, 411, 2081
Diamond, how it refracts light, 5177
 is made of carbon, 285, 839, 1289
 specific gravity, 3816
 the rich man's diamond, story, and picture in colour, 4934
 why diamonds are costly, 1570, 4746
 why it cuts glass, 3238
 why people wear diamonds, 1570
Diamond Jubilee, race horse of King Edward, 6044
Diana, goddess, in the woods, picture, 84
 slew Orion, legend, 3313
 was worshipped, 84
Dianthus, the pinks, 1817, 2042
Diaphragm, a muscle of the body, 1633
 how it works, picture, 1637
Diatoms, picture, 2340
Diaz, Bartholomew, discoverer, 59
Diaz, General Porfírio, his work, 4392
Dibdin, Charles, poems: see Poetry Index
 portrait, 3737
 wrote sea-songs, 3738
Dickens, Charles, his life, 2312
 poems: see Poetry Index
 portrait, 2307
 song of the kettle, an extract, 5508
 the stories of Dickens, and picture, 2430
 with characters from his books, picture, 2313

His Books

A Cheque for Ten Pounds, an extract, 5904
 A Christmas Carol, 2159
 Barnaby Rudge, 2761
 David Copperfield, 2827
 Dombey and Son, 2554
 Martin Chuzzlewit, 2637
 Nicholas Nickleby, 2633
 Oliver Twist, 2551
 The Chimes, 2285
 The Cricket on the Hearth, 2288
 The Old Curiosity Shop, 2757
Dicky show a light, game, 1072
Dictionary, its use, 1923
 story dictionary in English and French, 5923, 6067
Diderot, leader in French Revolution, 4054
 opinion on speaking and singing, 4073
 portrait, 4053
Dido, queen of Carthage, 72
Dielman, Frederick, an artist, 4152
Diervilla, description of, 4839
Diet: see Food
Die Wacht am Rhein, the German national song, 2754
Diffusion of gases, what it is, 3090, 4442
Digestion, how it is affected by the brain, 3109
 how our food is digested, pictures, 2206, 2343, 5911
Dimple, angel of the dimples, story, 2168
 what it is, 2673
Dinaric Alps, their position, 3222
Dingan, Zulu king, 1769
Dingan's Day, a great Boer victory, 1769
Dingo, the wild dog of Australia, 500
Dinner, at the inn, story, with picture, 5159
Dinner-table, things to make for it, 2255
Dinoceras, monster, picture, 44
Dinornis, skeleton, with picture, 855
Dinosaurs, prehistoric lizards, 48
Dinwiddie, Governor, sent Washington on journey, 882
Diocletian, emperor of Rome, his baths, 5806
 persecuted the Christians, 482, 533
 portrait, 534
Diomedes, a pirate, 5308
Dionysius, ruler of Syracuse, 626
Dionysius, story concerning, 5312
Diphtheria, disease of the throat, 1636
Dis, king of the underworld, 5316
Disbudding, causes fine blossoms, 927

Disc, its shape, 1384
Discobolus, Greek statue, 4160
Discontinuous spectrum, what it is, 2862
Discord, use in music, 4918
 what it is, 2620, 4859
Discovery, an exploring vessel, 4724
Disease, creation of new diseases, 2799
 how we can learn from monkeys, 3077
 partly our own fault, 2622
 reason of infection, 3972
Disraeli, Benjamin: see Beaconsfield
Distance, how to judge, 1641
 in a picture, 1642
 smallest we can measure, 5793
District of Columbia, holidays in, 4470
Diver, down in the deep, deep sea, 6285
 how his suit is made, 6285
 on every man-of-war, 6285
 pearl-divers, picture, 172
 weight of his suit, 6285
 why he has lead on his boots, 3760
Diver-petrel, 1626
Diving, how to swim and dive, 3819
 pictures, 3818
 why people rise to the surface, 4234
Dizziness, its cause, 3437
 why it causes everything to spin round, 2232
Dixie, history of song, 2954
Dnieper, river in Russia, 3623, 3745
Dniester, river in Russia, 3631
Dobsina, Hungary, ice cave, 5720
 picture, 5717
Dockyards, started, 1029
Doctor, of Burton Port, story, 468
 the world's great doctors, 4195
Doctor Syntax, rock, and picture, 1058
Dodder, plant, 3830; picture, 3832
Dodge, Mary Mapes, life, 2047

See also Poetry Index

Dodgson, Charles: see Carroll, Lewis
Dodo, bird, 47, 1428; picture, 1425
Doe, the female deer, 382
Dog, ancestors of, 6266
 and his shadow, mistake concerning, 5524
 brave little dog of the wood, story, with picture, 5160
 can a dog reason, 5790
Dr. Nansen's Eskimo dogs, 6274
 does not cry, 5383
 dog and ass, fable, with picture, 2849
 dog and the shadow, fable, 560
 dog in manger, fable, with picture, 189
 dog that came home again, story, with picture, 4799
 dog that knew his master, story, 4003
 dogs that became friends, 5308
 drawing of a dog from squares, 1073
 draws sledges in Arctic regions, 269
 Eskimo dog's ferocity, 6271
 Eskimo dog's usefulness, 6271
 friendship for man, 6265
 how it knows strangers, 1132
 "huskies" in Alaska, 4042
 intelligence of the, 5329
 its brain, 3716
 length of life, 2328
 making a kennel for, and picture, 5105
 mosaic at Pompeii, picture, 6138, 6142
 picture, 6268
 St. Bernard dogs rescuing travellers, 6270
 sheep dog's usefulness, 6270
 stories of collie dogs, 6274
 story concerning a, 5313
 story of Gelert, 5208
 story of your dog, 6265
 the different kinds of dogs, 500
 the dog and the wolf, fable, 1979
 turns round before lying down, 4596
 ugly (the) dog that became an angel, 5307
 various kinds, pictures, 498, 501, 503
 way to draw a dog, picture, 2034
 when all were wild, 6266
 why a dog feels the heat, 1912
 wild dogs, 142; picture, 137
 will travel back to its home, 5411
Dog daisy: see Ox-eye daisy
Dogfish, 1867, 2446; picture, 2447
Dog rose, with pictures, 4109
Dogtail grass, picture, 1335

INDEX

- Dogwood**, flowering, 4490; picture, 4486
 round-leaved, 4492; picture, 4491
- Doll**, a doll's Christmas hamper, 2131, 2258
 bracelets and necklaces, with picture, 2033
 doll that was once a little girl, story, and pictures, 5071
 dolls of many nations, with picture in colour, face 3392
 how to make a bonnet, 1613
 how to make a frock, and pattern, 1077
 how to make a table with reels, and picture, 4352
 how to make dolls from clothes-pegs, and picture, 4457
 how to make house, and picture, 2031
 how to make John Chinaman, and pattern, 450
 how to make knickers, and pattern, 835
 how to make of cardboard, paper, and wool, with pictures, 341, 342
 how to make stays, and pattern, 717
 how to mend a broken head, 4249
 in old Egyptian graves, 5100
 made from cork, and picture, 450
 making a chemise, and pattern, 577
 making furniture, and pictures, 1717, 1814
 why children are fond of them, 6164
- Dolomite**, peaks, 6264
 rock, where to find, 4246
- Dolphin**, 207, 1088; pictures, 48, 1087
- Domkey and Son**, story of the novel, 2554
- Domesday Book**, what it was, 436, 5942
- Domett, Alfred**: see Poetry Index
- Domino, St.**, life, 3986; portrait, 3981
- Dominican Republic**, flag, picture in colour, face 1640
- Dominoes**, games with dominoes, 4030
 tricks with dominoes, and pictures, 4139
- Dominion Day**, English holiday, 4463
- Domitian**, emperor of Rome, his rule, 531
- Donatello**, in the Marble Faun, 5432
- Donatello, Donato**, his life, 2782, 2788
 his monument of Gattamelata, 4164
 his St. George statue, 2779, 4167
 three of his best works, 4161
- Donizetti, Gaetano**, a composer, 3252
- Donkey**, pictures, 248, 271, 2378
 the donkey and the lions, story, 2608
 the donkey's wish, fable, 2378
 what kind of animal it is, 272
 why thistles do not hurt it, 2458
- Don Quixote**, story of the book, and pictures, 899, 949
- Don River**, in Russia, 3623, 3750
- Donne, Dr. John**: see Poetry Index
- Door**, how it is made, 1510
 of safety-vaults, 5373
- Dora**, Sister Dora and the toilers of Walsall, story, and picture, 1653
- Doras, the**, renamed Bon Homme Richard, 2898
- Dorcas**, how she clothed the poor, and picture, 4334
- Doré, Gustave**, pictures, Don Quixote, 950, 951, 953; picture of Cyrus returning vessels to the Jews, 5172
 picture, his vision of the creation, 6103
- Dorians**, Hellenic tribe, 5124
- Dormouse**, animal, 770; picture, 771
- Dorset**, the brave schoolgirl of, story, 4831
- Double decomposition**, a way of making compounds, 1667
- Double eye**, a fish, 2682; picture, 2683
- Doublets**, what words they are, 3240
- Doudney, Sarah**: see Poetry Index
- Douglas, Lord James**, knight of Bruce, 3084
- Douglas, Stephen A.**, and Kansas, 2009, 3536
 nominated for presidency, 2010
- Douglas fir**, where they grow, 216
- Doukhobors**, religious sect in Canada, 6052
- Doulton, Sir Henry**, and pottery, 4478
- Douro River**, where it is, 3352
- Dove**, and the ant, fable, and picture, 189
 doves, picture, 48
 what kind of bird it is, 2214
- Dovecot**, picture, 3890
- Dover**, harbour works, picture, 4433
- Dovetails**, in woodwork, 1347
- Dowelled joints**, 1511
- Downie, Captain**, commander of British fleet, 2902
- Doyle, Sir J. H.**: see Poetry Index
- Doyley**, of hairpin work, and picture, 4459
- Dragon**, belief in, 960, 5926
- Dragon-boat festival**, with picture, 111
- Dragon-fly**, 3260, 4215, 5021
 pictures, face 3140 in colour, 3257
- Dragon pigeon**, its eyes, 2215
- Dragon's arum**, plant, picture, 3831
- Dragon's Teeth**, sowing the, 186
- Drainage**, need for good drainage, 3146
- Drake, Edwin L.**, drove the first oil well, with picture, 4131
- Drake, Joseph Rodman**: see Poetry Index
- Drake, Sir Francis**, beat the Spaniards, 848
 his exploration in the south, 4730
 picture, 261
 playing bowls, picture, 849
 sailed round world, 60
 sought treasure in South America, 4502
 takes back the colonists from Roanoke to England, 6132
 voyage around the world, 266
- Drake, the**, sloop of war, and the Ranger, 2898
- Drakensberg**, mountains in Africa, 1768
- Draper, Herbert**, his picture of a child gazing at the sunlight, 3635
- Draughts**, fox and geese game, 4672
 how to play, and pictures, 4460
- Drave River**, in Hungary, 2360
- Drawing**, and painting a spray of leaves, 1453
 colours, and how to use them, 2654
 conventional, for decoration, 2895
 difficult drawing trick, 6068
 drawing a pig, game, 5000
 drawing and painting a daisy, 2894
 how to draw a cow, 5900
 how to draw a jam-jar, 973
 how to draw a leaf, 6057
 how to draw a picture with 12 lines and a dot, 5454
 how to draw a plain envelope, 492
 how to draw an open book, 2415
 how to draw chairs, 6053
 how to draw hundreds of faces, 5109
 how to draw in chalk, 253
 how to draw objects of which we see two or more sides, 6058
 how to draw straight lines, 1213
 how to draw to scale, 445
 how to draw with both hands, 1934
 how to make and paint patterns, 2174
 how to make drawings from squares, 1073
 how to make first picture, 252
 making circles and filling them in, 3428
 measuring things from a distance, 3134
 outlines, game, and picture, 5113
 pictures of leaves and twigs, 732
 prehistoric drawings, picture, 3400
 putting on a graduated wash, 3292
 simple patterns with flowers, 3374
 the right way to draw a box, 1693
 pictures to every lesson
- Drawn-thread work**, and pictures, 2351
- Drayton, Michael**, 3330
 poems: see Poetry Index
- Dreams**, do we see ourselves in dreams? 5383
 falling, in dreams, 5790
 remembrance of dreams, 3380
 what they show, 423
 why we dream, 2671
- Dred Scott Decision**, what it was, 2009
- Dresden**, battle of, 4364
 city, 2578, 2750
 picture, 2749
- Drew, Dorothy**, picture, 2388
- Drift**: see Gravel
- Drift men**, 192
- Drinker moth**, eggs, etc., picture, 2987
- Driver ant**, 2950
- Driving match**, game, 2252
- Drogheda**, taken by Cromwell, 1889
- Dromedary**, a camel used for riding, 276
- Drowning**, how to restore the half drowned, 5110
 rising three times idea, 2235
 what to do in cases of, pictures, 6247
- Drug store**, why coloured globes are used in windows, 5853

INDEX

Druids, the priests of the Britons, 196
 Drum, how to mend, 4249
 Drummer's knot, 236
 Drummond, Wm. Henry: see Poetry Index
 Dryden, John, life, 3903; portrait, 3907
 Drygalski, Professor von, discoverer, 4723
 Dublin, description of, 5460
 zoo famous for lions, 135
 Dublin, University of, 5460
 Dubois, Paul, influence as sculptor, 4162
 Du Chaillu, Paul, discovery of gorillas, 1766, 3076
 Duchess, who sat in rags, story, with picture, 4640
 Duck, a brood of ducklings, picture, 1678
 descended from wild birds, 1513
 swims by instinct, 1130
 the various kinds, 1520
 why it never gets wet, 155
 Duck-billed platypus, 559
 dwelling, 5417
 history, 5570
 picture, 861
 Duck under the water, game, 2571
 Du Cros, Harvey, and rubber, 5678
 Dudley, Lord Robert: see Leicester, Robert
 Dudley, Earl of
 Dufal, Monsieur, tells how reading for the blind was invented, 1982
 Dufay, Monsieur, experiments, 2115
 Dufferin, Lord, and Burmah, 1880
 Canadian governor, 1248
 Dugong, animal, 1088; picture, 1087
 Duma, state council of Russia, 3753
 Dumas, Alexandre, his book, The Count of Monte Cristo, 4325, 4407
 life and writings, 5221; portrait, 5247
 Dumas, Jean Baptiste, chemist, 4202
 Dumbness, its cause, 2456
 Dunbar, battle of, 1892; picture, 1023
 Duncan, king of Scotland, slain, 3079
 Duncan, Mrs. M. L.: see Poetry Index
 Dunedin, New Zealand, 1460, 1464
 Dungi, king of Babylon, 4984
 Dunkirk, sold by Charles II., 1028
 Dunlop, John, invented pneumatic tire, 5678
 Duodecimal system, what it is, 1985
 Dupeix, Francois, in India, 1704
 Durer, Albert, his life, 1258; picture, 1261
 Durham, Lord, as governor of Canada, 746, 1239
 Dust, raised by motor-car, picture, 4113
 through a microscope, picture, 2324
 what becomes of it, 3035
 where it comes from, 4113
 why a house becomes dusty, 4748
 Dustin, Mrs., escape of, with pictures, 881
 Dutch, foundation of colonies, 3462
 in America, 4036
 settled in Cape Colony, 1768, 4038
 story dealing with New Amsterdam, 5525
 trade with India, 1702
 trade with Japan, 366

Pictures of the Dutch

children, 3455, 3461
 Dutch home, 3461
 girls weeding stone pavement, 3461
 national costume, 3461
 people of long ago, 3459
 street, with man in native costume, 3457

See also Holland

Dutch East India Company, 3462
 Dutch family, of cork, and picture, 450
 Dutch Guiana: see Guiana
 Dutchman's Breeches, description, 2837
 Dwarf, dancing dwarf (the), illusion, 5667
 who feared drums, story, 5207
 Dwarf French beans, 3176
 Dwarf gentian, 1816
 Dwarf trees, in Japan, and picture, 2079
 Dwina River, discovery by Onthore, 4720
 Dyce, Wm., his picture of George Herbert in his garden, 1997
 D'ye ken John Peel? history of song, 5493
 Dyer, Sir Edward: see Poetry Index
 Dyes, from coal-tar, 2507
 Dynamics, the science of motion, 3552

Eadbold, king of Kent, 1320
 Eagle, adopted as arms of Russia, 3626
 American bald, or sea, 1839, 1843, 3039
 golden, 1840, 1842, 3039; picture, 1838; picture of egg, 1744
 length of life, 2327, 2328
 pictures, 51, 1838, 1839
 the different kinds, 1839
 what kind of bird it is, 1840
 why lectern is made like an eagle, 5650
 Eagle-girl, of the mountains, story, and picture, 711
 Eagle owl, 1848; picture, 1847
 Eagle's wings, stalactite, picture, 4516
 Eaglets, climb for the eaglets, story, 481
 Eanswith, St., founded a nunnery, 1320
 Ear, how to get anything out of it, 3397
 its construction, 3868
 machinery of the ear, picture, 3866

See also Hearing and Sound

Earache, causes, 157
 Eared pheasants, 1515; picture, 1516
 Earl's daughter and beggarman, story, with picture, 1322
 Early, Jubal Anderson, in the Shenandoah Valley, 2020
 Ear-rings, do not affect the eyes, 3762

EARTH

Child's Story of the Earth

The following are actual headings of the chapters in this section. The separate entries appear below, and in their proper places in the index.
 air, fire, and water, 937
 air is part of the earth, 3691
 changes always going on, 1869
 circumference, 3813
 comets, meteors, and sky-dust, 2495
 coronium not found on earth, 5023
 crosses the path of meteors, 2500
 different kinds of heat, 4179
 distance from the stars, 2614
 distance from the sun, 150, 2082
 forests and deserts, 3071
 has been burnt, 1371
 heat and temperature, 4473
 hot things and cold things, 4017
 how heat travels, 4319
 how heat works for us, 4365
 how it lost its light, 3378
 how its pull affects weight, 3274
 how land and water are placed, 3006
 how life began on the earth, 167
 how long life has existed on earth, 4744
 how movement changes matter, 3465
 how the air is kept round it, 5024
 how the earth was made, 307
 how things are measured, 3669
 how we know it is moving, 2507
 how we know it is round, 5
 is a moon to the sun, 3032
 is getting smaller, 4543
 its attraction, 1062
 its density, 542, 2229
 its different movements, 3469, 4345
 its magnetism, 5254
 its movement, 1572, 1577, 1578, 2281, 4821
 its size, 1944, 2081
 its surface is not dull, 1644
 its weight, 1128
 life of the earth, 4079
 moon's effect on its movements, 34
 movement at Poles and Equator, 5167
 music and noise, 4757
 nature's great mysteries, 5253
 not floating in space, 1130
 once below water, 2798, 2883
 once joined to the moon, 2226
 position with regard to the sun, 2426
 the ancient name for it, 2234
 the behaviour of a sound, 4913
 the big ball we live on, 1
 the colour of the stars, 2715
 the crust of a fiery furnace, 3227

INDEX

Earth, the earth as it is to-day, 541
the earth is always moving, 77
the earth's changing face, 3003
the earth's crumbling crust, 2881
the fire inside it, 1060, 3377, 3431
the fire that feeds itself, 637
the great marvel of water, 1167
the making of compounds, 1665
the making of other worlds, 2861
the making of the elements, 1419
the moon, the lamp of night, 2219
the most important elements, 1285
the pressure of the air, 3941
the pull of the earth, 3835
the shaping of the earth, 403
the size and weight of things, 3813
the soil and its uses, 3339
the stars as we see them, 2609
the stuff in it changes, 1128
the sun and his family, 143
the sun's family of worlds, 2423
the waves of sound, 4581
the wonder of the sun, 2081
the wonder of time and tide, 2279
the wonderful keyboard, 5173
the world inside an atom, 1553
three kinds of compounds, 1797
three wonderful gases, 1193
throws its shadow on the moon, 1862
what it looks like to other planets, 2226, 2800, 4345
what it was formed from, 3432
what it would be like without water, 3005
what its axis is, 2279
what light is made of, 5039
what the earth is made of, 837
what water is made of, 1039
what we should find if we dug through it, 2887
what would happen if gravitation ceased, 1577
why things move, 3547
will become like the moon, 1367
will probably stop spinning, 4120
wonderful, wonderful music, 4859
worlds in the skies, 1939

Pictures of Earth
a ravine in the earth a mile deep, in colour, face 836
as a globe before it shrank, 146
as seen from the moon, 2225
crust showing remains of animals, 2887
earth and the moon in space, 149
effect of nearness to centre on weight, 3551
how mountain ranges were formed, 407
how we know the earth is round, 5, 6
its distance from the planets, face 1
its history written in its rocks, 2884, 2885
its path, 2219
not a perfect ball, 411
on a summer's day in England, 79
on a winter's night in England, 79
shadow on the moon, 1865
shrank as an apple does, 407
the ball of fire that became the earth, in colour, face 308
the cloud of which the earth is made, 148
what the face of the earth is like, 408

See also World

Earth-hog, name for the aardvark, 1002
Earthquakes, damage, south, 3537
in Philippines, 2182
in Sicily, 3229
in the West Indies, 1878
occur in the sea, 3430
pictures, 3227, 3230
their cause, 2232, 2888, 3232
what they are, 77
why they do not occur in England, 4600
why they shake only part of earth, 3763
Ear-trumpet, how it helps people to hear, 3364, 4584, 5022
Earwig, does not enter the ear, 2328
in dahlias, 1509
its life-story, 3142; pictures, 2326, 3147
Easter eggs, how they are made, pictures, 2242
how to make our own, 3281
various kinds, pictures, 3281
Eastern Church, became powerful, 3158
founded 3150
the Church of Russia, 3624

Eastern Empire: see Byzantine Empire
Eastern Rumelia, united to Bulgaria, 3222
Eastern Turkestan, where it is, 3932
East India Company, formed, 3462
interest in tea, 5973
East Indies, name for India, 7
East Mark, the beginning of Austria, 2851
Eating, how and when to eat, 3045, 3109
how to eat and be healthy, 2343
how we eat, 5911

See also Food

Ebonite, name for vulcanite, 3543
Ebony, what it is like, 4998
Ebro River, in Spain, 3351
Ecbatana, remains of palaces, 5060
Echidna, animal, 860, 1000
dwelling, 5417
unchanged, 5570
picture, 861
Echo, how it is made, 1057
what it proves about sound, 4583
whispering gallery at Washington, 4584
Eclipse: see Sun and Moon
Ecuador, flag, picture in colour, 1640
scenes in, pictures, 4575
state of South America, 4574
Eddy, Mrs. Mary Baker, founder of Christian Science, 3066
Eddystone Lighthouse, 738
Eden, Garden of, 3873
Edenhall, the luck of, legend, 3166
Edfu, temple of, 4790, 5826
Edgar, king of Scotland, 3080
Edgar, Sir James: see Poetry Index
Edgar the Peaceful, king of England, 434
name on charters, 592
Edgeworth, Lady, how she saved Castle Lis-sard, 481
Edgeworth, Maria, her life, 2592
pictures, 2593, 2596
Edict of Nantes: see Nantes
Edinburgh, founded by Edwin, 428
Scott monument, picture, 5013
Edison, Thomas Alva, his inventive mind, 4943
his life, 4318
improved electric lamp, 658
improved electric lighting, 658
invented kinetoscope, 5088
invented the phonograph, 3091
life and work, 4447
portrait, 4313
Edmonton, as fur market, 5154, 5370
scene in, 5430
Education, how it affects the memory, 4794
how it should begin, 4733
importance of suiting education to the child, 5284, 5286
in Canada, 1242, 5233
in France, 2399
in Germany, 2755
in United States, 2666
Minister of, 5233
Edward, the Black Prince, and Bertrand du Guesclin, 2806
fought in France, 2704
started woollen trade in Yorkshire, 752
won his crest at Cressy, 750
Edward I., king of England, at the battle of Lewes, 600
called the Hammer of the Scots, 1021
conquered Wales, 118
his reign, 747, 2704
in the Crusades, 1592, 3878
life, 5943
pictures, 749, 2703
tried to conquer Scotland, 118
Edward II., king of England, deposed, 748
gave Newcastle right to sell coal, 800
life, 5944
was murdered, 2704
with Piers Gaveston, picture, 749
Edward III., king of England, befriended John of Montfort, 2478
pictures, 749, 2710
reign, 748
won lands in France, 2704
Edward IV., king of England, 756, 5946
Edward V., king of England, murdered with his brother, 756, 1980, 4638, 5946
pictures, 1981

INDEX

Edward VI., king of England, 845
 how he saved his sister's life, 3254
 life, 5947
 picture, 2705
 trade with Russia in his reign, 3626

Edward VII., king of England, 5952
 marriage depicted on Denmark monument,
 3598
 pictures, 1698

Edward the Confessor, king of England, 434,
 5941
 built Westminster Abbey, 4635
 his name on charters, 592
 his successors, 2702
 portrait, 2710

Edwards, W., built Pontypridd Bridge, 19
 Edwin, king of England, 423

Edwin Drood, Dickens's story, 2436

Eels, their habits, 2451
 various kinds, pictures, 2449, face 200

Efficiency, of machinery, 4387

Egbert, first king of England, 428, 430
 stayed at court of Charlemagne, 2064

Egg, A. L., his picture of Henry Esmond being
 knighted, 3269

Egg, as illustration of equilibrium, 3837
 bird's eggs: see Birds
 chicken feeds on the white, 3242
 Columbus did not set one on end, 5524
 contains much water, 1172
 how does Mary get the eggs? problem with
 pictures, 102, 239
 how to paint brown or pink, 254
 its value as food, 3217
 production of eggs in U. S., 2658
 proportion of water, picture, 1171
 so-called ants' eggs, really chrysalids, 5524
 what eggs are made of, 1367
 why bad eggs float, 1367
 why eggs are good food, 1574
 why it breaks less easily when held length-
 ways, 4600
 why it gets hard when boiled, 1574

Egg and fan race, 2252

Egg hat, game, 1614

Egmont, Count Lamoral d', story of his death,
 with picture, 51/1

Egmont, mountain in New Zealand, 1462

Egret, bird, 1954; picture, 1950

Egypt, ancient monuments, 5098, 5100
 became a Roman province, 5266
 Britain helps to govern, 1765
 flag, in colour, face 1640
 flooded by the Nile, 4254
 how the ancient writings were read, 4782
 how to journey there, 5813
 influenced by Greeks, 5124
 invaded by Napoleon, 2274
 irrigation of, with pictures, 5399
 its conquerors, 4788
 its history, 4256, 4779
 its position, 281
 its temples and its tombs, 4782, 4786, 5819,
 5822
 leather-dressing an important trade, 6167
 old necklace, 4789
 old seats, 4789
 people of Egypt, 4789
 Persian rule, 5060, 5064, 5065
 picture of cattle on tomb, 4792
 the rulers of Egypt, 4785, 4786, 4790
 war with Assyria, 4980

Egyptian asp, a cobra, 1376

Egyptians, are small, 2673
 catching birds, picture, 4790
 dressing-table, picture, 4788
 helped Turkey against the Greeks, 3220
 how they wrote, 3399, 5098
 practised sculpture, 4159
 relics in British Museum, 4782
 religion and amusements, 4782, 4785, 4787
 studied astronomy, 1655
 toys, picture, 4788
 used the arch in buildings, 620
 what they knew of Africa, 279
 worshipped the beetle, 3264
 worshipped the ibis, 1956
 writing, picture, 5099
 wrote on papyrus, 3863

Egyptian vulture, with picture, 1844, 1841

Eider duck, 1522; picture, 1519

Eidophone, how to make, with picture, 5295
 pictures made by voice, 4072

Eiffel Tower, view from, with picture, 5339

Elaine, Lily Maid of Astolat, story, 1185
 picture, 1184

Elamites, and their wars, 4974, 4976, 4980

Eland, large antelope, 382; picture, 381

Elastic, what it means, 1133
 why does it stretch, 5486

Elastic gum, name for india-rubber, 3542

Elba, how Napoleon came from Elba, story,
 and picture, 812
 Napoleon's place of exile, 2277, 2576, 4364

Elberfeld, mono-rail, picture, 91

Elbe River, in Germany, 2676, 2750

Elbruz, Mount, 3750

Elburz Mountains, in Persia, 3932

Elder, Mrs. Lilla: see Poetry Index

Elder, what it is like, with pictures, 3451
 what to make from an elder branch, 3070

Eleanor, of Aquitaine, wife of Henry II., 594,
 2532

Eleanor, of Castile, wife of Edward I., her
 death and monuments, 748
 saved her husband's life, 747, 2533

Eleanor, of Provence, wife of Henry III.,
 2533

Election Day, duties for, 4469

Electors of the United States, 1596

Electric bell, experiment with air-pump, 4581
 how it rings, 3237
 how to fit, with pictures, 2567

Electric eel, 2448, picture, 2449

Electricity, aids the growth of plants, 3689
 best conducted by metals, 1293
 can disperse fogs, 3090
 can produce a high temperature, 2082
 causes thunder, 777
 chooses the easiest path, 2875
 discovery and employment of the electric
 light, 657
 electric waves, 5176
 electrical experiments, pictures, 2135, 2136
 electricity and magnetism, 5253
 electro-magnet and the work it does, with
 pictures, 5471
 how it carries sound along the wire of the
 telephone, 349
 how it got its name, 1421
 how the currents travel through the air, pic-
 ture, 3531
 how the electricity of lightning kills, 3688
 how to make battery, with pictures, 1076
 how to make it with a lemon, 98
 made at home, 2135
 men who found electricity, 2113
 positive and negative, 1555, 5255
 why it cannot pass through glass, 5845

Electric light, boy who found electric light,
 with pictures, 654
 first made, 657
 what makes it glow, 3688
 what makes the new electric lamps so bright,
 5960
 why a lamp gives out heat, 3377

Electric ray, fish, 2448

Electro-magnets, 2121
 the work they perform, with pictures, 5471

Electrons, carry electricity, 5255
 given out by the sun, 2089
 make up atoms, 1004, 1422, 5846
 their size, 1553, 4828

Electroscope, picture, 2136

Elegy, what it is, 343

Elements, made up of atoms, 1193
 some of the elements, 637, 839
 the making of the elements, 1419
 the most important elements, 1289
 what an element is, 1290, 1372

Elephant, account of capture of a herd, 6154
 education of young, 5482
 how captured, pictures, 6152
 in Africa, 1766
 intelligence of, 5326
 its tusks, 2098
 length of life, 2327, 2328
 mammoth elephant, picture, 44
 mastodon elephant, picture, 44
 pictures, 51, 275
 rogue elephant, 5728; picture, 5722

INDEX

- Elephant**, skulls of elephants, picture, 3679
 what kind of animal it is, 272
- Elephant hawk moth**, eggs, caterpillar, and chrysalis, with pictures, 2987
- Elephant tick**, with picture, 3297
- Elers Brothers**, and pottery, 4478
- Elevator**, how it goes up and down, with pictures, 5576; invented, 2669
- Elfin Hill**, story, with picture, 4512, 4513
- Elgar, Sir Edward**, composer, 3252
- Elgin, Lord**, as governor, 1242, 1248
- Elgin Marbles**, 620, 4956
- Eliot, George**, life, 2598; portrait, 2593
- Eliot, Sir John**, defended the right of free speech, 1024, 1892; portrait, 1896
- Elizabeth**, empress of Russia, 3630
- Elizabeth**, of England, daughter of Charles I., captivity and death, with picture, 5361
- Elizabeth**, of England, daughter of James I., married Count Frederick, 2523
- Elizabeth**, princess of York, married Henry VII., 2533, 2706
- Elizabeth**, queen of Edward IV., how she found sanctuary, and picture, 4638
- Elizabeth**, queen of England, and Mary Queen of Scots, 3088
 and Sir Walter Raleigh, 5394, 6131
 at Folkestone, story, 1320
 blesses ships, 5703
 encouraged the Swiss, 2966
 friend of Henry IV. of France, 2070
 helped the Netherlands, 3462
 her reign, 846, 2535
 how her brother saved her life, 3254
 last hours, a picture, 5503
 life, 5947
 navy of, 6233
 pictures, 840, 2538, 5949
 relations with Russia, 3628
 sent envoys to Persia, 3380
 the death of a queen, picture, 5502
 what she thought of coal, 800
- Elizabeth**, queen of Roumania, 3220
- Elk**, its size, 382
- Ellerton, John**, wrote hymns, 1997
- Elliott, Charlotte**, wrote hymns, 1998
- Elliott, Ebenezer**, Corn Law rhymers, 1121
- Elm**, flowers and fruits, 2835
 tree, 3180; picture, 3180
- Elmore, Alfred**, his picture, The Tuileries, 4057
- Elsa**, of Brabant, 5093
- Elsie**, the (boat), used in rescue, 3106
- Elves**, the cobbler and the elves, story, and picture, 712
- Elves snowdrop**, 5272
- Elysian Fields**, what they were, 72
- Embattle**, in carpentry, 1618
- Embroidery**, appliqué mantel-border, with pictures, 4996
 English, 5526
 how to embroider a pocket-handkerchief, and pictures, 1507
 how to pad leaves, picture, 1507
 putting name on handkerchief, pictures, 5919
 satin stitch, picture, 1507
- Emerald, Lake**, picture, 5608
- Emerson, Ralph Waldo**, and the Alcotts, 2047
 author of the Concord Hymn, 2953
 friend of Thoreau, 1434
 his life and teaching, 1478, 4105
 pictures, 4097, 4101
 poems: see Poetry Index
 portrait bust of, a picture, 4843
 what he said of philosophers, 4626
- Emilius**, prince of Hesse Darmstadt, how his men saved him, story, 4010
- Emin Pasha**, rescued by Stanley, 284
- Emma**, Norman wife of Ethelred, 434
- Emmanuel**, king of Portugal, 59
- Emmett, Daniel Decatur**, life of song-writer, 2955
- Emperor**, and the figs, story, 4935
 the emperor's new clothes, story, and pictures in colour, 3641
 the emperor's nightingale, story, 3203
 the foolish emperor and his fowls, story 2301
- Emperor moth cocoons**, picture, 3895
- Empire Day**, English holiday, 4463
- Empire Route**, the All-Red Route, 1364
- Empress of China**, the, picture of ship, 5609
- Emu**, bird, 1364, 1428; picture, 1429
- Emulsion**, what it is, 2236
- Enamel**, covers our teeth, 2099
- Enchanted horse**, story, and pictures, 955
- Enchanted thorn**, story, 1677
- Encyclopædia**, brought out in China, 110, 112
 its meaning, 779
- Ender, E.**, his picture of Shakespeare, 3333
- Endicott, John**, settled at Salem, 518
- Ending**, is change, 5247
- Energy**, conservation of energy, 3469, 4322, 4476
 degradation of energy, 4367
 dissipation of energy, 4368
 how it is wasted, 4366
 its different forms, 3552
 where does it go after a football match, 5849
- Engine**, how it wastes energy, 4367
 picture in colour, 289
 problem, with picture, 1080
 some powerful engines, pictures, 301
 the first engines, pictures, 613
- Engineer**, how he thinks, 4942
- Engineering**, damming the Nile, with pictures, 5399
- England**, action in Taiping rebellion, 114
 African possessions, 1765, 4262
 ancient people, 192
 and Trent affair, 2014
 bread famine in, 5644
 captures American ships, 1394, 1396
 captures French fleet in Gulf of St. Lawrence, 538
 Christianity introduced, 198, 2329
 climate, 1860, 4323
 coming of the Romans, 196
 conquest by the Normans, 436
 denied trade with Europe by Napoleon, 2276
 destruction of the monasteries, 844
 different religious opinions, 516
 early trade and "factories" in India, 4036
 famous kings, 2701
 fighting for the crown, 747
 first men in, story, 5993
 first railroads in, 612
 flag, 2333
 gained a footing in Egypt, 4258
 grew wool for Flemish looms, 3458
 growth of trade, 1028, 1096
 hard times induce colonists to go to America, 513
 helped Greece, 3220
 holidays in, 4463
 in Canada, 538, 539, 540, 742
 invasion by the Picts and Scots, 200
 Irish driven from Ulster, 1022
 Irish rebellion quelled, 1025
 kings of, pictures, 5941, 5945, 5948
 men who made England great, 1100
 navy of, history, pictures, 6233
 need of a strong navy, 6234
 Norman buildings, 591
 once joined to France, 2063, 5993
 origin of the name, 427, 4338
 Parliament formed, 600
 progress and reforms, 1096, 1099
 queens, 2532
 religious persecution, 5067
 snowstorm in the country, picture, 5832
 soil, 3035
 struggles with the Danes, 430
 submission to the pope, 845
 the beginning of her freedom, 591
 the end of a long struggle, 1093
 the founding of colonies, 1021
 the founding of the nation, 427
 the teaching of the people, 432
 the times of the Stuarts, 1021
 the times of the Tudors, 841
 took possession of Australia and New Zealand, 4038
 trade in Victoria's reign, 109
 trade with Russia, 3626
 undiscovered history, 4115
 union with Ireland, 1096
 union with Scotland, 1021, 1029
 Venezuela boundary dispute, 3533
 war over Canada, 219, 1094
 war over French possessions, 749, 754
 war over India, 1094, 1704
 war with France in Mary's reign, 2535

INDEX

England, war with Scotland, 748, 846
war with the Dutch, 1027, 1028, 3463
wild animals that used to live in England, 192, 996

Pictures of England

how her coasts are lighted, 4426
how it was joined to France, 2072
how the great commerce of England began, face 191
See also Battles; British Isles and British Empire; United States; Wars and names of individual wars
English, Dr. Thomas Dunn, author of Ben Bolt, 2957, 3740
English and French, a story-dictionary in, 5923, 6067
English Channel, formed, 194
English Children in the Olden Time, extract from the book, 5359
English history, puzzle pictures, 926
English language, in Elizabeth's time, 94
made up of many others, 1268
men who first wrote English, 6019
number of words in it, 2330
why it has different words for the same thing, 2239
why it has words from other languages, 3239
Engrailed moth, picture, 3413
Enid, the story of Geraint and Enid, with picture, 1976
Enns, town, 2854
Enterprise, the, war-ship, and Boxer, 2902
Envelope, how to draw and paint, 492
picture, 493
Enver Bey, Young Turk leader, 3226
Epinionondas, led the Thebans, 1304, 5130
Epaphroditus, master of Epictetus, 2911
Ephesus, founded by Ionians, 5124
Epic poetry, what it is, 93
Epictetus, his teaching, 2911
saying of, 1271
Epidermis, layer of the skin, 1910
Epiglottis, closes the windpipe, 1635
Epimetheus, companion of Pandora, 5078
Equation, what it is, 1669
Equator, divides Africa, 1765
divides the earth, 410, 411, 1750
earth's movement at, 5167
why it is hot at the Equator, 3034
Equilibrium, different kinds, 3673, 3837
shown by tops, picture, 3669
Erasmus, Desiderius, his enthusiasm for Greek, 3156
what he said of Amsterdam, 3456
Erdely, Hungary, 5718
Erebus, an exploring vessel, 4724, 4730
Erebus, Mount, discovered by Ross, 4730
picture, face 4719
Erech, ancient city of Mesopotamia, 4974
Eric, who gave his life for his master, 963
Ericsson, John, improved the "Monitor," 2014
picture, 2017
Ericsson, Leif, discovers Greenland, 257
Erie Canal, opened, 1826, 3534
Erie, Lake, its position, 212
Erin, the, ship used by Jerome Bonaparte, 4910
Esarhaddon, king of Assyria, 4980
picture, 4981
Esbjerg, port of Denmark, 3598
Escorial, building of the, 5498
built by Philip II., 3358
Eskimo dog, 500; picture, 503
story of Nansen's dogs, 6274
Eskimos, Captain Hall's book, 4724
eat fat, 3239
exhibit concerning, 4901
hunt the musk-ox, 378
in the Barren Grounds, 1920
pictures, 1919, 4719, 4727
their way of living, 4720
with Peary, 5211
Esopus Creek, dam at, 5115
Esparto grass, 888
Essen, where Krupp's factory is, 2752
Essences, their smell, 1572
Essex, the, and Alert, 1398
sails around Cape Horn, 2902
Estonian girl, picture, 3747

Eteocles, ruled in Thebes, 468
Eternal City, name given to Rome, 3012
Ethelbert, king of England, 429
Ethelred, king of England, 434, 5941
Ether, cannot convey sound, 4581
conveys light but not sound, 3977
its different waves, 5173, 5254
its effect on the solar system, 2283
its specific gravity, 3816
light waves in ether, 5042
seat of electrical attractions, 5256
the cause of our seeing, 5039
what happens when it moves, 3466
what it is, 2798, 2866
Ethers, related to alcohols, 1873
Ethyl alcohol, is very poisonous, 1872
Etna, Mount, a volcano, 3012, 3229
Eton, founded by Henry VI., 756
Etruscans, attacked by Greeks and Romans, 5261
settled in Italy, 5259
Ettrick Shepherd, name given to James Hogg, 701
Eucalyptus, tree, 1364
Euclid, the mathematician, how he argued, 4618;
portrait, 4625
Euclid of Megara, a great philosopher, 4618;
portrait, 4619
Eugene, prince of Savoy, 2530
Euphrates River, battles fought on its banks, 3152
its course, 4971, 4975
said to have watered the Garden of Eden, 3873
Eurasia, name of Europe and Asia, 3623
Eureka, its meaning, 3096
Europe, increase of population, 1641
spread of Christianity, 2522
See also under names of individual countries
Eurystheus, king of Argolis, 5163
Eustace of Boulogne, 1587
Eustache, his love for his master, 1914
Evans, Petty Officer, death of, 5054
Evaporation, explained, 5687
goes on at all temperatures, 2505
what it is, 2235
Evening primrose, 3950
Everest, Mount, 1545; picture, 3693
Everglades of Florida, inhabitants, 5985
Evolution, Darwin's theory, 855
meaning of word, 5169
Ewald, Carl, wrote fairy tales, 1474
Ewing, Mrs.: see Poetry Index
Exciter, what it is, 2135
Excommunication, what it means, 2526
Exercise book, what to do with, 2487
Exhibitions: see World's Fair
Experiments, feats depending on balance, 5659
showing pressure of the air, 3942
See also Tricks
Expiration, what it is, 1637
Explorations, of America, 257
of Capt. Bonneville, about the Great Salt Lake, 1830
of Capt. Robt. Gray in Oregon, 1396
of Coronado in the Southwest, 262
of Father Marquette in Illinois, Michigan, etc., 264
of Hawaii, 2181
of John C. Fremont in the Rocky Mountains, 1830
of Lewis and Clark in the Rocky Mountains and beyond, 1396, 3534
of Pacific coast of North America, 217
of Peary in the Arctic, 5211
of Portugal in Canada, 535
of Simon Fraser in Canada, 5147
of the Cabots in Labrador, 535
See also Colonies, Names of Countries, etc.
Explosion, its cause, 5249
Eyam, attacked by plague, 625
Eye, cones of the, 2879, 4403, 4444
do a horse's eyes magnify? 5381
do our eyes magnify? 6961
how it sparkles, 5168
how pictures are printed on the eyes, 41, 4548
how the iris affects the pupil, 4294
how the lens works, 4295

INDEX

Eye, how to remove dust, 3397
 how we can preserve our eyes, 4510
 imperfections of, 5639
 our pineal eye, 1213, 3976
 rapid perception of, 5640
 rods of the eye, 4403, 4404
 the effect of a blow on the eye, 2798
 the light in our eyes, 4401
 the parts of the eye, 4293
 the retina, 4403
 the story of, with pictures, 4217, 4213
 the use of two eyes, 2460
 walking with eyes shut, 1642
 what eyes are made of, 3977
 what happens if blood-vessels are stopped, 1132
 what spots before the eyes are, 3035, 4401
 what the pigment-cells do, 4405
 why babies' eyes change colour, 5845
 why eyes are different colours, 4294
 why onions make it water, 1989
 why the eyes close during sleep, 1272
 why the pupil varies in size, 3434
 why we blink, 2453
 why we cannot see small things, 2874
 why we see colours when we shut our eyes, 3035

Pictures of the Eyes

eye of a fish, a bird, a man, 4213
 how eyes grow from the brain, 4507
 how our eyes deceive us, 104
 how pictures are printed inside, 41
 in which the cornea is too convex, 4293
 in which the cornea is too flat, 4293
 section of a perfect eye, 4293
 section of the eyeball, interior of the eye-ball, portion of the retina, 4401

See also Sight

Eye-bright, lives on other plants, 3830
Eyebrows, their use, 779, 1962
Eyed blenny, fish, picture, face 200
Eyed hawk moth, picture in colour, face 2982
Eyelids, do not shut out all light, 1266
 their duties, 4218
Eyre, E. J., explorer, 357; picture, 356
Eyrie, the eagle's nest, 481
Ezra, Hebrew prophet, 6220

F

Faber, Frederick, hymn-writer, 3427
Fable, what a fable is, 462
Fabrizio, Gentile da, life, 1256, 4948
 portrait, 4945
Fabricius of Acquapendente, discovered the valves of the veins, 4198
Face, how to draw hundreds of faces, with picture, 5109
 why fear makes people pale, 3236
 why it changes, 1267
 why it is crooked in a mirror, 1572
 why our face shows our character, 1910
 why our faces keep warm, 2505
Fading, why things fade, 3235
Faerie Queene, stories from, and pictures, 687
Fahrenheit, Gabriel, invented the thermometer, 3864
Fahrenheit thermometer, 2073, 3671
Fainting, what happens, 1132, 2453
Fairfax, Thomas, Lord, besieged Knareborough Castle, 1109
 his siege of Latham House, 4718
Fairies, and the hunchback, story, 1106
 the fairies of St. David, story, 2608
 the fairy's revenge, story, 1432
 the wise and foolish fairies, fable, and picture, 4223
Fair Maid of Perth, The, story of the novel, 1494
Fair Oaks, battle of, 2016
Fairy-books, the writers of, 1467
Fairyfoot, story, with pictures, 4001
Fairyland, picture in colour, frontis., Vol. 2
Fairy rings, and picture, 4595
Faithful John, story, with pictures, 4630
Falcon, 1839, 1846; pictures, 1845
Falconer, E., wrote song Killarney, 3743
Falconer, Robert Alexander, of Toronto University, portrait, 5235

Falconet, Etienne Maurice, sculpture, 4162
Falkland, Lucius Carey, Viscount, became a follower of Charles I., 1888, 1896
 portrait, 1896
Falling bodies, fall at same speed, 304, 3551
 gravity increases the rate of falling, 3814
 how far a stone falls in first second, 3433
 speed increases as they fall, 3432, 3672
 why a falling object turns round, 2459
Fallow deer, 382
False cat, picture, 2976

FAMILIAR THINGS

Child's Book of Familiar Things

The following are the actual headings of the chapters in this section; the separate entries appear below, and in their proper places in the index.

a boxful of sunlight, 2357
 a glass of water, 2101
 a little talk about pictures, 4585
 a little talk on sculpture, 4159
 a piece of rope, 3991
 a river under a city, 5115
 a stick of chocolate, 2237
 a tale of a knife and fork, 4735
 a talk about trees, 3177, 3439, 3649
 a walk by the seashore, 1409
a walk in an English lane, 3885
 boring through the Alps, 6203
 coal: how we dig up sunshine, 799
 England's eyes and arms, 4425
 footpaths in the air, 19
 how a balloon sails in the sky, 396
 how a candle is made, 2362
 how a lighthouse is built, 737
 how a pair of boots is made, 3102
 how a pin comes out of the earth, 288
 how a rifle fires twelve bullets, 5800
 how an oyster makes a pearl, 171
 how buildings are saved from ruin, 3043
 how men learned to write, 3399
 how moving pictures are made, 5083
 how our letters come to us, 3321
 how the maps are made, 1749
 how the tea comes to the table, 88
 how we get our fish, 3765
 how we get our ice, 3707
 how we got the piano, 1015
 how we send a telegram, 3519
 making a basket out of willows, 395
 making a box of matches, 2358
 making iron and steel, 5537
 making the desert blossom, 5399
 Master Jack Frost, artist, 4891
 men beneath the waters, 5585
 moving pictures, 5083
 nothing like leather, 6167
 riding on wheels of air, 5677
 some foreign monuments, 5003
 splendour in the grass, 2975
 the china on the table, 4477
 the earth's hidden treasure, 5297
 the flags of all nations, 1639
 the grass of the field, 1331
 the great wonder of a train, 293
 the greatest navy in the world, pictures, 6233
 the house upon the sea, 73
 the life of a sponge, 4236
 the life of the earth, 4079
 the riders on the wind, 6081
 the salt of the earth, 223
 the story in a teacup, 5973
 the story of a fur coat, 2727
 the story of the clock, 1535
 the story of the microscope, 2319
 the story in a pair of shoes, 3097
 the wonder of a book, 887
 the wonder of the telephone, 349
 the wonderful unseen worker, 5471
 the world's bread-and-butter, 1143
 travelling long ago, pictures, 6105
 what a big gun can do, 5855
 what lies behind your pen, 5731
 where the fruit comes from, 641
 where the gas-light comes from, 393
 where the glass comes from, 1173
 where the money is made, 3617

INDEX

- Familiar Things**, where the nuts come from, 1965
 where the sugar comes from, 693
 winter's white diamonds, 2509
- Family Compact**, a political party, 746
- Famine**, Irish, 5464
 of bread in England, 5644
- Fancy-dress** tea-party, with pictures, 5194
 5195
- Fantail pigeons**, 2215; picture, 2213
- Faraday**, Michael, discovered how to electrify wire, 4314
 pictures, 2113, 2120
 story of his life, 2119
- Farman, Henri**, designed aeroplane, 163, 6082, 6086
- Farmer**, and his sacks, a story, 5654
 and sons, fable, and picture, 2303
 and stork, fable, and picture, 2939, 4755
 farmer and dwarf, story, 4798, 5208
 how did the farmer enlarge the fold? puzzle, 4248, 4354
 went trotting upon his grey mare, poem, in colour, 2813
- Farne Islands**, lighthouse, picture, 1735
- Faroe Islands**, belong to Denmark 3598
- Farragut, David Glasgow**, captures New Orleans, 2014
 picture, 2017
 statue of, with picture, 4847, 4848
 takes Mobile, 2019
- Fatalism**, what is, 5484
 why is it bad to believe in? 5485
- Father**, when did you last see your father? story, and picture, 4806
- Fathers of Confederation**, in Canada, 1244
- Fat**, difference between fat and oil, 2802
- Fats**, fuel-foods, 2698
- Faun**, The Marble Faun, an extract, 5432
- Faustinus**, who died for his religion, 964
- Fawkes, Guy**, pictures, 1790, 1791
 the story of his plot, 1022, 1791
- Fear**, how it influences deeds, 5132
 in the dark, 2674
 of beetles or spiders, 4233
 of loud noises, 2674
 why hair stands on end with fright, 4233
 why it makes our teeth chatter, 4439
 why it makes people pale, 3236
 why we cannot control it, 2673
- Feather**, through microscope, pictures, 2323
 why it falls to the ground, 3862
- Feather and fans**, game, 2572
- Feather starfish**, 2342; pictures, 2334, 2337
- Feather-stitching**, 718; picture, 717
- Februa**, picture, 4516
 was a Roman feast, 4516
- February**, how it got its name, 4515
- Federalists**, followers of Hamilton, 1394
- Federation of Labour**, Canadian, 4092
- Feeling**, effect on thinking, 5028
 how injured hand recovers feeling, 4749
 loss of feeling after an accident, 4749
 not under our control, 2673
 pleasure, sorrow and tears, 5383
- Fell, Margaret**, the "mother of Quakerism," 5835
 interest in prison reform, 5836
- Felling**, how to do running and felling, 456
- Felspar**, rock, 4246
- Fenris**, wolf-spirit, captured, 85
- Ferdinand**, king of Spain, Columbus asks him for help, 56
 married Isabella of Castile, 2367, 3356
 picture, 57
- Ferdinand III**, king of Castile, his fine character, with picture, 4717
- Ferdinand, Prince**, of Bulgaria, 3222
- Ferguson, Colonel Patrick**, 991, 992, 1822
- Ferments**, produced in the stomach, 2345
 their importance for life, 4052
 what they do, 1872
- Fern**, bears no flowers, 2078
 fern-basket for a nickel, 5665
 hardy ferns, picture, 573
 of long ago, 170
 section under microscope, picture, 2321
 when to plant, 573
 where to grow, 3176
- Fernando, Prince**, of Portugal, 3163
- Ferrar, Robert**, bishop, 5068
- Ferrara, Renee, Duchess of**, how she saved the prince of Conde, 3472
- Ferret**, 140; picture, 137
- Ferris, G. W.**, built a great wheel, 2801
- Fertilisation**, of a flower, 3736
 of plants, 2835, 2839
- Fertilisers**, that enrich the soil, 2254
- Fescue grass**, pictures, 2978, 2979
- Fendal system**, in England, 436
- Fibrous-rooted wheat**, picture, 1333
- Field, Cyrus West**, and Atlantic cable, 2474; portrait, 2467
- Field, Eugene**: see Poetry Index
- Field cricket**, is harmless, 3141
- Fieldfare** bird, 2058; picture, 2055
- Fielding, Henry**, 1730; portrait, 1725
- Field mice**, 770
- Field of the Cloth of Gold**, and picture, 840
- Fig**, figs growing, picture in colour, 647
 how the chalcid fly helps it, 3258
 where it grows, 642, 647
- Fighting instinct**, its importance, 5133
- Fight with the dragon**, 6070
- Figure-heads**, carved by William Rush, 4841
- Figure of eight knot**, and picture, 235
- Figures**, how to write figures, 3289, 3424
 invented by the Arabs, 3878
- Figwort**, 4970
 pictures, 4968
- Fiji Islands**, off Australia, 1466
 pictures, 1463, 1465
- Filbert**, hazel nut, 1965; picture, 1969
- File-fish**, its teeth, 210
- Philippines**, origin of, 2182
- Filling the gap**, game, 574
- Fillmore, Millard**, administration, 3536
 picture, 3532
- Filter**, that a boy can make, 5662
 what it does, 5524
- Filtering**, of water, pictures, 2109
- Finch, Francis Miles**: see Poetry Index
- Finch**, 2057; pictures, 2059
 purple, 3491
 varieties in Canada, 3492
- Fingal**, and a Scotch giant, story, 2029
- Finger**, bones of a, picture, 2440
 fingers, pictures, 2543, 2545
 how the fingers are formed, 2545
 why a numb finger cannot feel, 4346
 why they are not the same length, 1986
 why we have ten fingers, 1985
- Finger-nails**, 156, 1986
- Finger-prints**, used to identify burglars, and pictures, 1864
- Finisterre, Cape**, in Galicia, Spain, 3353
- Finland**, education in, 5935
 in the homes of the Finnish people, pictures, 5937
 its history, 3630, 5934
 life in, 5933
 peasants of, at work, pictures, 5936
 settled in Russia, 3623
 the "Kalevala," 5938
 travelling in, 5940
 what kind of country it is, 3753
- Finley, Dr. Carlos**, mosquito theory of, 3200
- Finley, John**, 1820
- Finley, President**, picture, 5052
- Finns**, are farmers, 3601
 driven north, 3592
- Fiords**, inlets of the sea, 3592
- Fire**, cannot light itself, 3689
 child rescued from, a story, 4959
 dying down in a cottage, picture, 3377
 fire inside the earth, picture, face 1062
 has helped to shape the earth, 404
 how a draught makes a fire burn, 4117
 how to light a fire, and picture, 4032
 not an element, 939
 not put out by the sun, 1372
 the earliest ways of making, 653; with pictures, 774
 what makes colours in the fire, 5848
 what to do in case of fire, 3067
 why a fire smokes, 3757
 why firelight dances, 4822
 why it goes out, 3377
 why it is hot, 1060, 3758
 why water puts out fire, 1775
- Fire-arms**, improvements in, 2667
- Fire-backed pheasants**, 1515
- Fire-damp**: see Marsh-gas

- Fire fish**, picture, face 200
Firefly, lights forest, 3256; with picture, 3255
 lives in warm countries, 53
Fire on the mountain, game, 4144
First aid, in case of accident, 5110
 what to do in cases of drowning, pictures, 4247
First boy in London, story, 5995
First Estate, nobles of France, 2268
First men in England, story, pictures, 5993
Fir-tree, and bramble, fable, and picture, 4274
 the discontented fir-tree, story, and pictures, 3575
Fish, William, wrote the Last Will of Charles Lounsbury, 5203
Fish, Williston, author, 5203
Fish, being landed at Newlyn, picture, 3764
 big fish of sea and river, 2443
 change colour, 2341
 can see and hear, 2380
 common fish of our rivers, picture, 2679
 different kinds, 665
 does a fish drink, 5960
 eggs, 3900
 eyes of, 4217; with picture, 4213
 fish of the rivers and lakes, 2675
 fossil fish, picture, 2838
 have cold blood, 545
 have feeling, 4230
 have no lungs, 362
 how their gills are formed, 3956
 how they breathe, 1081, 2340
 how they can drink sea-water, 4343
 how they developed, 3678
 how they hear, 1867
 how they live in a frozen pond, 4229
 how we get our fish, 3765
 in natural colours, picture, face 200
 in rivers and in the sea, 1272
 of Canada, 5601
 smaller fishes of the sea, 201
 supply in United States, 2658
 that have no eyes, 2682
 the chief facts about fish, 661
 the different kinds in the sea, 2335
 the lowest back-boned animals, 2437
 value as food, 3113, 3217
 what they feed on, 4324
 why they are not salt, 3242
 why they can breathe under water, 3763
 why they cannot live on land, 915
 why they die in a jar of water, 2455
 why they do not drown, 1868
 will not change into anything else, 2454
 with skins like armour, 46, 49
Fisher, Bishop John, 3210, 5067
Fisher, Mrs. Clark, captain of industry, 3066
Fisher-girl of Picardy, picture, 2395
Fisherman's bend, how to make it, 3283
Fish-hatcheries, government, 2658
 in Canada, 3900
Fish-hawk: see Osprey
Fishing, drift-net fishing, 3765
 fishing-boats, pictures, 201, 3765
 in Mousehole Harbour, picture, 3764
 of Canadian Indians, 2558
 seine-net fishing, how it is done, 3765
Fishing-frog, the angler-fish, 207
Fish lizard, of long ago, 44, 48, 49
 picture, 44, 49
Fitch, John, made a steamboat, 2463
Fitzball, Edward, wrote My Pretty Jane, 3741
Fiume, port of Hungary, 2860
Five Forks, battle of, 2022
Five Nations, hatred of French aroused, 264
 tribes included in, 17
Fives, game, 1614
Five-shilling piece, how to make it stand on its edge, trick, 98
Fixed oils, 2802
Fixed stars, 146, 2609
Flag, plant, of different kinds, 5272
 blue, a flower, 3051
Flag, American, first, 1640
 American, the evolution of the "Stars and Stripes," 4467
 American, on Ft. McHenry inspired the "Star-spangled Banner," 4467
 how the British flag was made up, 2333
 Norwegian, at South Pole, 5051
Flag, of all nations, 1639; with pictures in colour, 1640
Flag-Raising Day, why celebrated, 4467
Flags, game, 574
Flag-wagging: see Semaphore signalling
Flame, and sound waves, 4918; with picture, 4917
 how wire gauze affects the flame of a gas-jet, 4319
 why flames go up, 2233, 3974
Flamingo, 1958; picture, 1959
Flamsteed, John, astronomer, 1662; portrait, 1665
Flanders, earls of, power in Netherlands, 3458
 English wool was used in, 3458
 Flemish merchant's house, picture, 3459
 weavers in England, 752, 3458
Flashing messages at night, how it may be done, 6250
Flat fish, picture, 205
Flat-Iron Building, in New York City, picture, 2663
Flavian emperors, ruled in Rome, 531
Flaxman, John, work as a sculptor, 4162
Flea, good flea and the bad king, story, 5305
Fleabane, blue, picture, 5188
Flemish loop knot, and picture, 236
Fletcher, John, was a poet, 3330
Fletcher, Robert, portrait, 5236
Fleur-de-lys, on compass, 5650; in Canada, 3051
Flicker, a woodpecker, 3040
Flinders, Matthew, explorer, 355; portrait, 357
Flint, in cliffs, 5137
 with pictures, 774
 with which people made fire, 653
Floating, the law of floating things, 3096
 why small things move towards large things, 3865
 why things float, 912, 3096
Floating foxtail grass, picture, 1334
Floating meadow grass, picture, 1339
Flodden, battle of, 846, 3086
 before and after, picture, 3085
Flood, in France, 2394
 on the Hwang-ho, 106
 the flood at Linton Falls, story, and picture, 4829
Flora, Cape, in Franz Josef Land, 4726
Florence, incident concerning dome of cathedral, 5524
 its history, 3018
 makes silk and jewellery, 3024
 on the Arno, 3012
 was a centre of learning, 3156
Pictures of Florence
 cathedral, 2781
 cathedral and Lily Tower, 2787
 gates of San Giovanni, 2783
 general view, 2781
 Santa Maria Novella, walls, 2785
 street, showing the Uffizi Gallery, 2784
 window in Giotto's Tower, 2790
Florida, admitted, 3535
 an agricultural state, 5985
 claims to, 1824
 conquest of, 260
 controlled by Spain, 1387
 discovery of, 258
 grows flowers and fruit, 643
 orange-grove, picture, in colour, 643
 peninsula, 4381
 purchased, 1825, 3534
 seceded, 2010, 3536
 sold by Spain, 3360
 taken from Spain, 886
Florida, steamer, ran into Republic, 3524
Flounder, colour experiment, 206
Flour, contains little water, 1170
 how flour is made, 1150
 Hungarian flour, the finest, 2860
 its value as a food, 2924
 making flour and bread, pictures, 1150
Flower-box, making a flower-box for the window, and pictures, 1078
Flowering rush, 4966; picture, 4963
Flower-pots, made from old tin cans, and pictures, 1720
 why they have holes, 5962
Flowers, all trees have, 2077
 can see, 2797
 colouring matter of red flowers, 4118

Flowers, die in winter, 425
do not feel pain, 4337
everlasting flowers, 1509
fertilised by bees, 2826
flowers frozen in liquid air, picture, 4051
garden flowers, picture, in colour, 3729
get fresh supply of honey, 4826
habits of flowers, 3949
how a flower is born, 3731
how they get their colour, 4442
how they resist cold, 3094
how to arrange for the house, 578
how to keep cut flowers, 1279
how to preserve real flowers, 3511
how to prevent plants flowering, 1074
little stories about flowers, 190, 1677
making simple patterns with, 3374
of British authors, 4609
of Canada, 2835, 3049
of the garden, 5269
of the seaside, 5185
of the stream, 4961
once all wild, 911
sleeping with flowers in the room, 1370
their scent, 38, 1860
their sleep, 1265
to make paper flowers, and pictures, 4140
what they must have to grow, 4337
why do they droop in a heated room, 5641
why petals are not green, 4118
why the same flower has different colours, 5850
why the sun does not fade them, 4548
why they die so soon, 5791
why they vary in colour, 3089
why they were made, 2075
wild flowers, picture, in colour, 3728

See also Plants and Separate Names

Flowers of the Forest, The, written about
Flodden, 3086

Flower-stand, rustic, how to make, and pictures, 4349

Flower-vase, how to make, of reels, 4352

Fluid pressure, how to prove the equality of, 3948
same in all directions, 3946

Fluorine, gaseous element, 1290

Flushing, port of Holland, 3456

Fly, is produced from egg, 43
its hearing, 5021
its life-story, 3144
its sight, 5020
its strength, 4231
pictures, 2323, 2326, 3257

Fly-catcher, lives on flies, 2218
in Canada, 3490

Flying, how men learn to fly, and pictures, 161, 5788
why we cannot fly, 2674

Flying dragon, a lizard, 49, 1220

Flying-fish, its battle for life, 207
picture, in colour, 51
what kind of fish it is, 207

Flying fox, 766: picture, 767

Flying gecko, 1220

Flying lemur, with picture, 767, 768

Flying machines, kinds of, and pictures, 161, 6086
the difficulty of making, 3833
Wright Brothers' aeroplanes, 6081

See also Balloon and Aeroplane

Flying phalanger, 767

Flying squirrel, 767, 768

Fly the garter, game, 3920

Foam, why it is white, 1133

Foam-flower, the Miterwort, 2840

Focus, what it is, 2880

Fog, how fogs are caused, 918
what causes fog to disperse, 3090
why fog deadens sound, 3973

Fold, how did the farmer enlarge the fold? puzzle, 4248, 4354

Folk-song, what folk-songs are, 3027

Folkstone, fool on the stool, tale, 1320

Follen, Eliza: see Poetry Index

Follow my leader, game, 574

Fomentation, how to apply, 3397

Fondants, how to make, 3512

Food, and its uses, 2695
from sea and plain, pictures, 1241
how and when to eat, 3045

Food, how animals use their food, 3236
how much food we require, 2700
how our food is digested, 2343, 5911
how some animals can do without, 2456
how the diet of animals differs, 3045
in the Arctic, 5212
mushrooms as, 4751
Nature's wonderful food, 2791
of Arabs, 6034
of Canadian Indians, 2558
passages in the mouth and throat, picture, 1635
the different values of, picture, 2695
the real value of foods, 3109
the value of meat as food, 3213
what the first living things ate, 4114
why it is cooked, 1056
why its price varies, 5248
why we have different tastes, 3238
world's food supply, 1644

Fool, how did the king's jester escape from prison? and picture, 2034, 2139
why fools were employed by kings, 4278

Fool's parsley, description, 4288
picture, 4286

Foot, bones, picture, 2545
how the foot is formed, 2546
used as hand by ivory-workers, 4257
why our feet do not wear away, 2456

Football, how to play, diagram, 6245

Footie, Commodore, at Fort Henry, 2013

Foraminifera, form chalk cliffs, 2335

Forbidden room, story, 1671

Forced vibration, 4914

Ford, Edward Onslow, his statue of General Gordon, 4170
sculptor, 4162

Forearm, part of the arm, 2545, 3427

Forefathers' Day, holiday in Massachusetts, 4470

Foreign language, difficulty of, 4077

Foreign words and phrases, 5698

Forel, Dr., and dragon-flies, 4216
studied bees, 780

Forests, Canadian, and their wealth, with pictures, 3783, 5601
deserts and forests, 3071
destruction of, in America, 2657
fire protection of, 3784
forest which has turned to stone, 3073
how forests were buried, 2798
of British Columbia, 5610
of the New World, picture, 3075
of the Old World, picture, 3074
petrified, of Arizona, 3589
picture, 408
so-called deer-forests not forests, 5524
the source of life, 3073
what happens when destroyed, 3076

See also Trees

Forfarshire, the, wrecked, 1733

Forfeit-in-the-ring, game of, 4144

Forfeits, and how to pay them, 5104

Forget-me-not, its story, 190
what it is like, 4970
when to plant it, 1716, 3278

Fork, for digging and planting, 233
how it came into use, 4735
how it is made, pictures, 4739

Forks and spoons, picture, 4735

Fork-tailed petrel, where it lives, 1626

Formalin, used to preserve things, 1873

Formic acid, in bodies of ants, 780, 2943

Formicarium, how to make one, and picture, 3916

Formosa, island, 363

Formula, what it means, 1667

Forster, George, accompanied Captain Cook, 853

Fort Caroline, in Florida, 262

Fort Chapeauyan, its fur trade, and picture, 2728

Fort Dearborn, on the site of Chicago, 5513

Fort Donelson, captured, 2013

Fort Duquesne, battle of, 884, 885
built, 882

Fort Fisher, captured, 2019

Fort Frontenac, battle of, 885
built on site of Kingston, 539

INDEX

Fort Garry, in Riel Rebellion, 12
settled, 5366

Forth Bridge, as seen by engine-driver, picture, 25
how it was built, 20
pictures, 19, 23

Fort Henry, captured, 2013

Fort McHenry, Star-Spangled Banner written during bombardment of, 2955, 4467; picture, 4465

Fort Necessity, 882

Fort Pitt, erected on site of Pittsburgh, 885

Fort Resolution, picture, 1917

Fort St. Louis, built, 266

Fort Sumter, captured, 2012, 3536
declines to surrender, 2010
fired on, 2012
garrison firing, picture, 2023

Fort Ticonderoga, battles of, 984, 1820

Fort Washington, battle of, 986

Fort William Henry, captured, 540, 884

Fortress Monroe, Davis imprisoned in, 4467

Fortune telling, by character, 5251

Fortunes of Nigel, *The*, story, 1495

Forum, in Rome, 3015, 5261, 5263, 5802
pictures, 5807

Fossil fish, picture, 2388

Fossils, in Natural History Museum, 4904
how they are formed, 2886
how to make a collection, 4246
what the name means, 2885
where they are found, 2883

Foster, Stephen Collins, author of negro melodies, life, 2954
poems: see Poetry Index

Foucher, Adèle, 6157

Fountain, a little fountain in a jar, trick, 6068
why a lion's head is used, 5853
why water rises, with picture, 679

Fountain-pen, how it is made, pictures, 5732
how to clean one, 4456
what it is made of, 5731

Fourth of July: see Independence Day

Fowl and jewel, fable, and picture, 560

Fowler, Sir John, built the Forth Bridge, 20

Fowls, come from wild birds, 1513
drinking fountain, picture, 4672
house, picture, 4671
how to choose them, 4671, 4672

Fox, Charles James, and slavery, 1100
how he governed the country, 2384
portrait, 2379

Fox, George, the founder of the Quakers, 5835
his marriage to Margaret Fell, 5837
picture, 5834

Fox, Gilbert, sang Hail Columbia for the first time, 2956

Fox, adventures of Reynard the fox, a story, 5310
and the bear, a story, 1063
changes its coat in winter, 1777
communication between foxes, 5325
dwelling, 5414, 5416
fox and bear, fable, and picture, 3852
fox and chickens, game, 4144
fox and grapes, fable, and picture, 560
fox and his wife, picture, in colour, face 568
fox and the crow, fable, 463
fox and the faithful horse, story, 957
fox and the frog, fable, 4008
fox and the goat, fable, 3310, 5238
fox and the lion, fable, 3310, 5238
fox and the mask, and picture, 2303
fox and wolf, fable, and picture, 2378
fox in the hole, game, 3920
fox in the well, fable, 463
fox, picture, in colour, 134
fox repaid in his own coin, *Canterbury Tale*, 438
hungry fox and the kitten, story, 1525
pelts of, 4820
what kind of animal it is, 141

Foxglove, description, 4616
gives nectar only to bee, 3736
pictures, 3827, 4613

Foxtail grasses, pictures, 1334, 2977

Fracture, green stick fracture, 2439
how to treat, 5110

Fram, exploring vessel, 4726, 5051

France, American trouble with, 3533
as it is to-day, 2391

France, assists America, 992
became an empire, 2276
boy who died for the Republic, 5512
captures American ships, 1394, 1396
civil war began, 2277
colonies, 2400, 4261
conquered by Great Britain in America, 4037
defeat at Cape St. Vincent, 3358
flag, 1640
French revolutionists, 4053
government, 2399
helped Greece, 3220
history to the Revolution, 2063
in Canada, 218, 219, 535, 540
in the New World, 880, 4036
in the Revolution, 2267
industries, 2396
interference in Mexico, 4390
interferes with treaty arrangements, 1387
its climate, 2392
loses American territory, 886
National Assembly's power, 2268
National Guard formed, 2270, 4056
nicknames of kings, 2065
population, 1644
rivers and canals, 2394
saved by Joan of Arc, 120
sculpture revived, 4161
Spain occupied, 3360
takes Calais, 2535
took Alsace and Lorraine, 2528
towns and people, 2398
trading stations in India, 4036
war about India, 1094, 1704
war over Spanish Succession, 1029
war with Russia, 3631

Pictures

army entering Mexico, picture, 4385
army marching against the Germans, picture, 2582
flag, picture in colour, 1640
maps, 2063, 2072, 2390
flight from Vittoria, picture, 3355

See also French, the

Francis II., emperor of Austria, 2530

Francis I., king of France, encouraged art, 4161
knighted by Bayard, 129
held gay courts, 2068

Francis II., king of France, 2068

Francis Joseph I., emperor of Austria, and portrait, 2851, 2856, 5712

Francis Joseph II., emperor of Germany, met Catherine II. of Russia, 3631

Francis Joseph glacier, picture, 1461

Francis, King, story of, 5348

Francis of Assisi, among the birds, picture, 1006
his death, picture, 4588
story of his life, 1007

Franco-German War, 2277, 2580

Franklin, Benjamin, and the constitution, 1389, 1390
appeals to France, 2398
as inventor, 2667
experimenting with a kite, picture, 2117
portrait bust of, 4842
portraits, 987, 2113
story of his life, 2116

Franklin, Sir John, his exploring expeditions, studied electricity, 2135
4724
portrait, 4725

Franklin, district of, 1247

Franklin, state of, 1822

Franks, besieged Paris, 2317
conquered the Alemanni, 2964
invaded Gaul, 2064
invaded the Netherlands, 3457

Franz Joseph Land, expedition, 4724

Fraser, Simon, explorations of, 5147

Fraser River, discovered, 5147
in British Columbia, 216
picture, 5609

Frechette, Louis, 5870

Freckles, what they are, 3974

Freda in the Giant's Plaything, 5341

Frederick VII., king of Denmark, gave Denmark a constitution, 3596
statue in Copenhagen, 3598

Frederick I., Barbarossa, German emperor, death, 1590
 did homage to the pope, 3014
Frederick of the Red Beard, in the Crusades, 3878
 presented a candlestick to Aix-la-Chapelle Cathedral, 2752
 proclaimed king, picture, 2525
 story of his life, 2526
Frederick I., of Prussia, visiting a school, picture, 2529
Frederick II., German emperor, 1592
Frederick II., the Great, his work for his kingdom, 2530
 on his travels, picture, 2529
 Peter III. made peace with him, 3630
 story of him and a horse, 4273
 took part of Poland, 2573
 visited by Bach, 3244
Frederick, Count, led the Protestants in Germany, 2528
Frederick William, elector of Brandenburg, supported German emperor, 2530
Freeman, Mrs. Mary Wilkins, picture, 2043
 sketch of work, 2049
Freesias, how to treat them, 1610
Freestone, used for building, 5197
Free vibration, 4914
Freibourg, dates from twelfth century, 2964
Fremont, John C., carried most of northern states in 1856, 2009
 explorations of, 1830
French, a story-dictionary in English and, 5923, 6067
French, Daniel Chester, sculpture of, with pictures, 4843, 4845, 4846
French, the, expedition to destroy Hudson's Bay Co.'s posts, 5148
French and American, game, 5113
French and Indian War, 979
 See also **France**
French Language, Æsop's fables, 4278, 4755, 5238, little picture-stories in French, 255, 494, 735, 974, 1214, 1455, 1695, 1936, 2176, 2416, 2655, 2896, 3136, 3294, 3376, 3498, 3509, 3788, 4040, 4096, 4241, 4304, 4535, 5392
 comment Gotham acquit une mauvaise réputation, 4705
 founded on Latin, 2066
 l'amour d'un frère, 6067
 la chatte et le perroquet, 4912
 la jeune fée du Lac Van, 4130
 la plus sage fille du Wessex, 4007
 les enfants dans la forêt, 5056
 le malin fermier et le nain, 5208
 le roi, le noble et le paysan, 4008
 les oies qui gardaient Rome, 3855
 object lesson, picture, 5111
 spoken by upper classes in Russia, 3746
 things in school-room, picture, 4384
French marigold, 719
French nursery rhymes: see **Poetry Index**

Pictures

attack on the Tuileries, 4057
 Charlotte Corday arrested, 4061
 denunciation of Robespierre, 4061
 destruction of the Bastille, 4055
 gaoler reading names of prisoners, 2271
 Girondins going to the scaffold, 4059
 Madame Roland in prison, 4059
 oath in the tennis-court, 4055
 Parisians marching to Versailles, 2269
 royal family captured by the mob, 4057
 royal family in prison: Marie Antoinette's trial, 4058
 victims on their way to execution, 2271
French ranunculi, 1716
French Revolution, 1095, 2267, 4053, 4062
French seams, how to do them, 456
French silk weavers, in England, 1028
Fresco, what a fresco is, 4586
Fresh air, how necessary it is, 906
Fretwork bracket, with pictures, 5293
Freya, gave us the name Friday, 87
 goddess of peace, 428
 picture, 86
Friction, helps to stop a wheel, 683
 helps us to walk, 3694
 how friction causes heat, 2508, 3094
 what it is, 773

Friday, how the day was named, 87, 428
Friedland, battle of, 2276; picture, 2273
Friesland, state in the Netherlands, 3458
Frigate bird, and picture, 1630, 1631
Fright, effect of, on colour of face, 5959
Friiled lizard, with picture, 1220, 1227
Fringed gecko, 1227
Frisians, invaded the Netherlands, 3457
Frith, John, put to death, 5067
Fritillaries, butterflies, 2992
Fritillary, plant, see **Snake's head**
Frobisher, Sir Martin, exploration of, 267
 explorer, 2535
 portrait, 4725
 tried to reach North Pole, 4722
Frog, breathes greatly by its skin, 1963
 frogs and bulls, fable, and picture, 4804
 frogs and toads, pictures in colour, 1228
 how did the frogs jump on the tumblers?
 and picture, 1609, 1619
 how it hears, 155
 how it is formed, 2438
 how to draw a frog from circles, and pictures, 1619
 intelligence and communication of, 5328
 more often seen in wet weather, 155
 prolonged life of nerve of frog, 2628
 shows no fear, 3415
 the frog that became a prince, story, and pictures, 1316, 1317
 the frogs who wanted a king, fable, and pictures, 462
 the life history of a frog, 662, 1223
 the proud frog, fable, and picture, 877
Frogbit, plant, 4962
Frog-spit, name for the froth-fly, 3139
Froissart, Jean, writer, 752
Frolic, the, and Wasp, 1398, 2902
Frontenac, Count de, Governor of Canada, 539
Frost, beautifies things, and picture, 2510
 how it affects water, 3694, 4546
 Jack Frost, artist, pictures, 4891-99
 makes water-pipes burst, 3694
 sweetens the soil, 2134
Frosted glass, lets light through, 1266
Froth-fly, life-story, 3139
Fruit, admitted duty-free by mistake, 5668
 American fruits, picture, in colour, 651
 contains many salts, 2698
 difference between, and vegetable, 5958
 how fruits with stones are formed, 2075
 how to keep fruit fresh, 3825
 ripe and unripe fruits, 4748
 the world on a table, story, 5206
 when to gather fruit, 4354
 where the fruit comes from, 641
Fruit bat, 766; picture, 767
Fruit-trees, how to plant them, 4462
Fry, Elizabeth, her life, and picture, 1297
Fuchs, Leonhard, botanist, 5277
Fuchsia, a South American plant, 5271
 how to harden it, 573
 how to treat fuchsia cuttings, 1350
 in garden, 5271
 pictures, 5277
Fuego, volcano, and picture, 4390
Fuel, what may be used as fuel, 4032
Fuel-foods, give us heat and power, 2926, 5959
Fuentes d'Onoro, battle of, 4364
Fugitive Slave Law, and its workings, 2008
 passed, 3536
Fuji-yama, description, 5558
 mountain, 370
Fulk of Anjou, reigned over the Latin kingdom, 1589
Fuller, George, art of, 4152
Fulton, Robert, and Napoleon, picture, 2471
 and the Clermont, 1398
 as inventor, 2667, 3534
 his steamboat, picture, 2469
 life, 2468; portrait, 2467
Fundy, Bay of, work of tides, picture, 4240
Funeral, why a man's horse follows, 5650
 customs of Canadian Indians, 2560
Fungus, contains no green matter, 4595
 how fairy rings are made, 4595
 pictures, 3832, 4595
 varieties of, 4751
Funny-bone, what it is, 2627, 3561

Fur, animals that bear, and method of obtaining, 4817
 early fur trade in Canada, 537
 important export of Alaska, 2178
 story of a fur-coat, 2727
 traders and trappers of Canada, with pictures, 5147
 where fur comes from, and pictures, 2728
Furnaces, open-hearth blast and puddling, 5539
Furniture, how to know the woods in furniture, 4998
 makers of beautiful things, pictures, 6123
 why it cracks at night, 4750
Further India, how it is made up, 1880
 people threshing rice, picture, 1874
Furze, its family, and picture, 4108, 4111
Fusel oil, found in whisky, 1872
Fust, John, lent Gutenberg money, 3569
Future, is it possible to know the, 5484

G

Gadsden Purchase, territory bought from Mexico, 3536
Gainsborough, Thomas, his picture, *A Girl*, 763; portrait, 759
 painter, 764, 4587
Galahad, Sir, 871; picture, 373
Galatea, the statue Pygmalion carved, 962
Galba, rebelled against Nero, 530
Gale, the gales that sweep across the sea, 5953
 where to rest in a gale, 4032
Galen, discovered blood in artery, 1579
 his life, 4197; portrait, 4195
Galicia, province of Austria, 2852
Galicia, province of Spain, 3353
Galilee, Lake of, in Palestine, 3874
Galileo, a famous astronomer, 147
 discovered phases of Venus, 2424, 2800
 discovered sun-spots, 2083
 discoveries about motion, 3549
 experiment with weights, 304, 3433, 3551
 first saw Saturn's rings, 2429
 his life, 1658; with picture, 1659
 invented the telescope, 1943
 made the first thermometer, 4371
 weight and gravity, discoveries, 3551
Gallandet Group, a sculptured group, 4846
Gall-fly, its eggs, 2460
Galton, Sir Francis, experiment with notes on animals, 4760
Galvani, Luigi, experiments with electricity, 2118; portrait, 2113
Gama, Vasco da, his explorations, 59, 280, 4258; portrait, 59
"Game Cock," nickname of Thomas Sumter, 990
Games, adjective letter, 5196
 America's national game, with diagram, 5287
 amusement with stops and commas, 5663
 anagram making, 5002
 balloon-breaking, 4242
 baste the bear, 1072
 battledore and shuttlecock, 3516
 bingo, 2572
 blackthorn, 1072
 blindfold games, 5000
 blindman's buff, 2571
 blind partners, 5000
 bottle corks, 6059
 bounce about, 1072
 bowls, 1072
 bows and arrows, 3516
 bridge-board, 2572
 buff with a wand, 5000
 bundle of rags, 4144
 bung the bucket, 1072
 buttercups and bees, 3516
 buz, 237
 capping verses, 5113
 catch-ball, 1614
 catch the salmon, 1072
 Christmas charade, 2253
 Christmas party games, 5895
 clumps, 2137
 conquers, 1072
 consequences, 2137
 coriscrown, 5113
 croquet, 4451
 cross-ball, 1614
 cudgel, 3614
Games, Dicky, show a light, 1072
 dominoes, 4030
 draughts, 4460, 4672
 drawing a pig, 5000
 driving match, 2252
 duck under the water, 2571
 easy games with playing cards, 4885
 egg and fan race, 2252
 egg hat, 1614
 feather and fans, 2572
 field golf, 724
 filling the gap, 574
 fire on the mountain, 4144
 fives, 1614
 flags, 574
 fly the garter, 3920
 follow my leader, 574
 forfeit-in-the-ring, 4144
 forfeits, and how to pay them, 5104
 fox and chickens, 4144
 fox and geese, 4672
 fox and hounds, 4672
 fox in the hole, 3920
 French and American, 5113
 games to play in the train, 6008
 garden gate, 2571
 garden merry-go-round, 5915
 garden quoits, 3614
 general post, 2573
 genteel lady, 2573
 golf, 3169
 goose march, 2572
 guard the block, 3614
 hay-games, 4136
 hide and seek on the hearthrug, 237
 hockey, 4993
 hold fast! let go! 2571
 home-made cup and ball, 6068
 hoop parade, 4027
 hoop race, 4027
 hop, skip, and a jump, 3614
 house paper-chase, 2725
 how many miles to Babylon? 4144
 how to arrange a paper chase, 6007
 how, when, and where? 237
 hunt the ring, 2571
 hunt the slipper, 2571
 hunt the stag, 4027
 I love my love, 237
 in the colonies, 947
 I spy, 574
 jingling, 5000
 jolly miller, 3614
 lawn-tennis, 4347
 leap-frog, 724
 leaping-pole, 3614
 lonely traveller's pastime, 6008
 magic answers, 2137
 marbles, 5106
 making rhymes, 5448
 menagerie race, 4560
 motor race, 4242
 moving figures with the hand, 5103
 new ball game for open air, 6011
 nine holes, 1614
 noughts and crosses, 5113
 object game, 2573
 obstacle race, 3614
 old maid, 4885
 oranges and lemons, 4144, 5196
 outlines, 5113
 of verses made with figures and letters, 5661
 of what is it? 5457
 pee ku, 3920
 picking plums, 5106
 pitchstone, 5106
 posting, 4027
 posture, 1614
 prisoner's base, 3920
 proverbs, 2137, 5202
 puss in the corner, 2571
 putting on the donkey's tail, 5000
 puzzle-picture of, 5458
 pyramids, 5106
 race with clothes-basket, 2252
 Red Indian race, 4242
 rhymes, 237
 ring-taw, 5106
 round tag, 574
 Russian gossip, 237
 sack race, 724

INDEX

Games, schoolmistress, 2573
 Simon says, 2137
 slate and pencil games, 5113
 snap, 4672
 snip-snap-snorum, 4885
 soap-bubbles, 3386
 spade the gardener, 4885
 spelling bee, 237
 spoons, 5000
 stand-up megs, 5106
 station-game, 6008
 steeplechase, 724
 stool-ball, 4029
 telegrams, 2573
 the holiday A B C, 6003
 the look-out game, 6008
 the serpent, 5106
 throwing light, 2573
 throwing the baseball, 1614
 tip-cat, 724
 tit tat toe, 2572
 Tom Tiddler's ground, 724
 to play on the beach, with pictures, 5527
 touch, 574
 trap-ball, 1614
 traveller and the wolves, 724
 tug of war, 724
 turnpikes, 4027
 up to London, 5113
 warning, 574
 what is it? 2490, 2570
 what is wrong? 5292
 wheelbarrow race, 4242
 where is it? 2356, 2490
 why is it? 2570, 2686
 winks, 2573
 wolf, 2572
 word game with skittles, 6062
 word-making, 2137
 you mustn't laugh! 2573
 zoo-guess, 2138

See also Sports

Ganges River, in India, 1545, 1546
 pilgrims bathing, picture, 1549
Gannet, bird, 1632; picture, 1631
Ganoids, fishes, 3678
Gap, the, entrance to Canadian Rockies, picture, 2263
Garden, flower garden, in April, 233, 572; in May, 719, 830; in June, 927, 1074; in July, 1203, 1279; in August, 1350, 1509; in September, 1610, 1716; in October, 1816, 1817; in November, 1928, 2042; in December, 2134, 2254
 grown on a wall, 5924
 how did the father divide his garden? puzzle, and pictures, 2489, 2565
 how to plant out, with picture, 830, 3278, 3616
 how to pot plants, 3826
 indoor garden without soil, 2563
 little gardens for invalids, 6010
 necessary tools for gardening, and pictures, 233
 school children learning gardening in Western Australia, pictures, 1863
 the story of Roy and his bedroom garden, 6010
 thinning out of plants, 573
 vegetable garden in March, 2971; in April, 3176; in May, 3278, 3398; in June, 3514, 3616; in July, 3726, 3826; in the middle of August, 3922; at the end of September, 4353; at the end of October, 4462

See also Plants

Garden cave, and pictures, 5001
Garden cities, what they are, 2874
Garden gate, game, 2571
"Garden of the Gulf," or "Garden of Canada," nicknames of Prince Edward Island, 5604
Garden of the Loves, picture, 4590
Garden Merry-go-round, how to make, 5915
Garden party games, 4242
Garden quoits, how to play, 3614
Garden seat, and picture, 3173
Garden spider, picture, 3299
Garfield, James A., assassination, 2417, 3537
 picture, 3532
Garibaldi, Giuseppe, patriot, 124, 3024
 picture, 125
Garonne, river, in France, 2394

Garrick, David, couplet on Goldsmith, 1732
 Garrick at Reynolds' house, picture, 4099
 his connection with Johnson, 4673
 wrote Hearts of Oak, 3738
Garrison, Theodosia: see Poetry Index
Garrison, William Lloyd, as anti-slavery leader, 2009
Gary, Blasco de, said to have made a steam-boat, 2468
Gas, becomes liquid when cooled, 311
 Boyle's law about pressure, 3948
 can be liquefied by liquid air, 4050
 compressible, 3948
 diffusion of gases, 3090, 4442
 gases known in science as fluids, 3941
 has no cohesion, 618
 in stars, 2719
 kinetic theory of gases, 3467
 lighter than air, 397
 meteors turn into gas, 2500
 specific gravity of gases, 3816
 the same as vapour, 3384
 the sun a mass of gas, 2082
 the use of hot gases rising, 2233
 three wonderful gases, 1193
Gas, coal, how our gas is made, and pictures, 393, 394
 different colours in flame, 1860
 effect of wire gauze on flame, 4319
 how it was discovered, 655
 utilisation of coal-gas, 655
 why shade hung over gas moves, 4509
Gas, natural, 2661
 in Canada, 1918, 5600
Gascoigne, chief justice, and Prince Henry, story, and picture, 4330
Gaseous stars, what they are, 2719
Gaskell, Mrs., life, 2595; portrait, 2593
Gasolene, burned in motors, 1771
 cleans material, 4456
Gasometer, how it stores gas, 393
Gate of Lions, 5004; picture, 5008
Gates, Ellen M. H.: see Poetry Index
Gates, Horatio, defeated, 990
 got credit of Saratoga victory, 988
 in Revolution, 984
Gathering, in needlework, 457, 835
Gattamelata monument, picture, 4164
Gauchos branding an ox, picture, 4567
Gaugamala, battle of Arbela fought there, 5061
Gaul, country, 420, 2063, 2329
Gauls, attacked Rome, 554, 5262
Gautama, Buddha's real name, 2995
Gautier, Theophile, story of his cat, 2494
Gaveston, Piers, picture, 749
Gavial, a kind of crocodile, 1221
Gay, John: see Poetry Index
Gebel-Tarik, led the Saracens, 3353
Gecko, a lizard, 1219; pictures, 1220, 1227
Geese, who guarded Rome, story, 554
Geiranger Fiord, picture, 3599
Gelert, the faithful dog, story, 5208
General post, game, 2573
Geneva, war meeting held, 2968
Geneva, Lake of, its size, 2960
Genevieve, St., her life, 2317
 scenes in her life, pictures, 2317, 2318
Genghis Khan, led the Mongols, 3878
Genoa, its docks, 3024; with picture, 3023
 its history, 3016, 3154
Genteel lady, game, 2573
Gentian, dwarf, 1816
 family of plants, 4112
 fringed, 5036; with picture, 5034
Geoffrey, of Anjou, count, 2532
Geology, derivation of word, 2234
 of America, 9
 the earth's changing face, 3003
 the earth's crumbling crust, 2381
 what faults are, 2888

See also Fossils

Geophilus, centipede, picture, 3297
George I., king of England, 1093, 5951
 nephew of Prince Rupert, 1895
 portrait, 2710
 tried to arrest Lady Nithsdale, 2203
 why he was made king, 2540, 2710
George II., king of England, 1094, 5951
 portrait, 2710, 5949
 power of England in his reign, 2710

INDEX

- George III.**, king of England, 1094, 5952
his watch, picture, 5165
review of volunteers, picture, 2709
what kind of king he was, 2710
- George IV.**, king of England, 1095, 5952
- George V.**, king of England, 5952; picture, 1705
- George I.**, king of Greece, 3598
- George, Black**, Servian leader, 3222
- George, St.**, and the dragon, story, picture, 960
cross, and pictures, 1213, 1935
statue, picture, 4167
story of flag of St. George, 2333
St. George and the dragon, picture, 961
- Georgia**, colony of, 524
its industries, 5984
secedes, 2010, 3536
- Georgia**, kingdom of Asia, 3631, 3878
- Georgian Bay**, description of, 6186
- Geraint and Enid**, story, and pictures, 1977
- Geranium**, cultivation, 573, 830
description, 5270
how to treat cuttings, 1350
likes to be fairly dry, 1074, 2254, 3514
pictures, 5275
the geranium family, 4111, 5270
wild, 3051
- Germ**, is a microbe, 781
- German dwarf**, entertainment, 2249
- German East Africa**, where it is, 4262
- Germanicus**, a famous soldier, 529
- German iris**, 5272
- "German road,"** through Tyrol known to Romans, 6260
- German silver**, what it is, 1870
- Germantown**, battle of, 988
- German tribes**, in Iberian Peninsula, 3352
in Switzerland, 2962
- Germanus**, Bishop and Geneviève, 2317
- Germany**, army, 2748
as it is to-day, 2747
folk-songs in English verse, 3027
maps, 2574
national song, 2756
navy and trade, 2750
people and education, 2755
population increases, 1644
possessions in Africa, 2756, 4262
Reichstag formed, 2580
the beginnings of Germany, 2521
the making of Germany, 2575
the Peasants' War, 2527
united under king of Prussia, 1640, 2277, 2581
- ## Pictures of Germany
- arms of Germany, 2521
children's open-air life, 2753
flag in colour, face, 1640
Germans as hunters, 2520
growth of empire, 2574
village in olden times, 2520
- Geronimo**, bones of, found in cement block, 6004
- Gesner, Dr. Abraham**, obtained and named kerosene, 4131
- Gessler**, how he treated William Tell, 1674
- Gettysburg**, battle of, 2016
- Geyser**, in Yellowstone Park, 587
picture, 441
what it is, 3232, 3598
- Ghent**, canal to Antwerp, 3455
its industries, 3458, 3464
oppressed by Charles V., 3460
treaty of, 746, 1400
- Ghibellines**, party in Italy, 3018
- Ghiberti, L.**, life, 2782
- Ghiberti, L.**, made gates of Florence Baptistery, 4161
portrait, 2779
- Ghoorkas**, a race in India, 1706
- Ghosts**, belief in, 3233
- Giant**, of the Peak, legend, 2377
who carried the poor, story, 1008
with three golden hairs, story, and pictures in colour, 1052 bis
- Giant centipede**, picture, 3297
- Giant dock**, 4966; picture, 4963
- Giant humming bird**, 1740; picture, 51
- Giant lily**, 5272
- Giant lizard**, picture, 44
- Giant Mountains**, in Germany, 2752
- Giant petrel**, 1626; picture, 1627
- Giant's Causeway**, picture, 4821
- Giant wood-louse**, picture, 3297
- Giant wood-wasp**, picture in colour, face 3140
- Gibbon, E.**, life, 4680; pictures, 4675, 4677
- Gibbon**, animal, 604; help in study of human disease, 3077
picture, 603
- Gibbs, James E. A.**, improved sewing-machine, 1624
- Gibraltar**, capture by British, 1875, 3358
its height, 3351
named after Gebel-Tarik, 3353
picture, 1880
- Gibson, John**, sculptor, 4162
- Gilbert, Sir Humphrey**, lost at sea, 267, 6131
- Gilbert, William**, his life, 2113
- Gilder, Richard Watson**: see Poetry Index
- Gilgamesh**, story of his adventures, 4981
- Giliaks**, Siberian race, and picture, 3751
- Gill-run-over-the-ground**: see Ground-ivy
- Gilman, Samuel**, author of Fair Harvard, 2957
- Gimlet**, its use, and picture, 338
- Ginger**, wild, description, 2839
- Giocondo, Giovanni**, his life, 1252
- Gloja, Flavio**, puts fleur-de-lys on compass 5650
- Giorgione**, his life, 1256, 1260
- GiOTTO**, how he drew a circle, 3423
life, 2780; pictures, 2779, 2789
work as painter, 4586
- Gipsy moth**, 3139
- Gipsywort**, and picture, 4969, 4970
- Giraffe**, its life-story, 998
pictures, 51, 997
- Giralda Tower**, 3356, 3361
- Girardon, Francois**, sculptor, 4162
- Girardot, Georges**, his picture of Columba's first sight of Scotland, 4706
- Girdler bridge**, 27
- Girl**, desperate ride, story, and picture, 2803
girl who walked to London, story, 2204
Hogarth's picture, 763
little girls of long ago, 2711
trusted with state secrets, story, 4336
who held the fort, story, 241
why boys are stronger, 2456
- Girodet, M.**, picture of Napoleon, 4358
- Gironde**, mouth of the Garonne, 2394
- Girondins**, in France, 4060; picture, 4059
- Gisborne, Thomas**: see Poetry Index
- Gizeh**, the Pyramids at, 5004
- Glacier**, Asulkan, picture, 5610
in Switzerland, 5671, 5673
largest glacier in Europe, 3601
pictures, 2515
river of ice, 409, 2515, 3223
- Gladiators**, who they were, 5265
- Gladiator's (the) Appeal**, a speech, 5505
picture, 5504
- Gladiolus**, 1509, 1817, 4462, 5272
origin, 5272
pictures, 1509, 5279
- Gladstone, William Ewart**, how he governed the country, 2338
pictures, 2379, 2387, 2388
what he said of Homer, 5127
- Glasdale, Lovers' Bridge** at, story, 1109
- Gland**, its functions, 1446, 1911, 2344
produces white cells, 1443
sweat glands, 1911
- Glass**, green glass, 2129
how a bottle is made, and pictures, 1174
how it was first made, 53
how to mend it, 4249
light passes through it, 3762
models of natural history objects, 4902
production of in U. S., 2661
where glass comes from, 1173
why electricity cannot pass through it, 5845
why it cannot be bent, 4231
why we can see through it, 1266, 2622
- Glasses**, how to get music from them, 4461
why cold water cracks a hot glass, 1062
why they do not break if boiled, 1872
- Glass-snake**, a lizard, 1219; picture, 1226
- Glasswort**, plant, and picture, 5190, 5192
- Glastonbury**, first church in England, 5524
- Gleaners, The**, picture, 2395

INDEX

- Glenallan**, the lost heir, story, 1649
Glendower, Owen, Welsh champion, 118
Globe, how it is marked, 1749, 1750, 1751
Globe-fish, 210; pictures, 51, 209
Globe-flower, picture, 4837
Globe-thistle, with picture, 5271, 5278
Glory of the snow, flower, 5272
Glossina palpalis, insect, 3145
Glottis, the voice-box, 1634
Gloucester, the fairy horn, legend, 1893
Glove, sachet, and picture, 1204
Glow-worm, 155, 3256; picture, 3257
 story concerning, 5344
Glue, how to prepare, 333
Glume, in botany, 1332
Glutton: see **Wolverene**
Glyptodon, prehistoric animal, picture, 44
Gnat, 3146; pictures, 2323, 3143
Gneiss, a rock, 4246
Goat, and the lion, fable, and picture, 3508
 life-story, 378, 380, 2328
 made from a pear, 5666
 picture, 379
Goat's-beard, closes its flower early, 3950
 picture, 3949
Goat-sucker, bird, 1740
Goat-willow, the willow, 3191
Gobi, the Mongolian desert, 3074, 3933, 6029
 pictures, 4125, 6032
Goblins, in the gold-mine, story, and pictures
 in colour, face 328
Go-cart, how to make with reels, 4352
Godavery, river of India, 1546
Goddess and tree, fable, and picture, 4804
Godfrey, of Bouillon, in First Crusade, 1587
 of Brabant, 5093
Godfrey, Miss Elizabeth, English children in
 the Olden Time, extract from, 5359
Godiva, Lady, how she helped her people,
 5386
Godowns, in Japan, 5561
Godwin, Earl, and King Edward, 434
Goethe, J. W., 2748, 5222; picture, 5217
Gog and Magog, 1318; pictures, 1319
Golab Khan, in Indian Mutiny, 1914
Golconda, in the Deccan, 1546
 tombs of kings, picture, 1551
Gold, an element, 838, 839
 discovered in Australia, 1358, 4039, 5298
 discovery in 1848, 1834
 expeditions in South America, 4505
 found in England, 4115
 found in the sea, 2619
 gold dust, picture, 2325
 gold-mine, picture, 1357
 gold-mining machinery, 5301, 5303
 in Alaska, 4042; discovered, 2178
 in Canada, 216, 1916, 5599, 5601
 its formation, 1571
 methods of procuring, with pictures, 5299
 production of, in U. S., 2660
 specific gravity, 3816
 what 15 or 18 carat means, 1870
 why called a noble metal, 1293
 why it does not tarnish, 1776
 why more valuable than silver, 1570
Gold Coast, of Africa, inhabitants, 1768
Golden apple, story, 1683
Golden bird, story, and picture, 874
Golden carp, picture, 2679
Golden fleece, story, and pictures, 185
Golden Hind, the, Drake's ship, 266
Golden Horn, Constantinople, 3150
Golden mountain, king of the golden moun-
 tain, story, and picture, 4225
Golden pheasants, 1515; pictures, 1516, 1741
Golden plover, 1518; picture, 1517
Golden-rayed lily, picture, 5278
Golden river, king of the, story, 1433
Goldenrod, seaside, picture, 5184
Golden rule, 1100
Goldfinch, 2058, 2328
 American, 3491
 pictures, 1741, 2059; egg, picture, 1744
Goldfish, feed on ant's eggs, 2946
 how to care for, 1722
Goldilocks, story, 5075
Gold Mountains, part of Selkirks, 5607
Goldschmidt, Otto, husband of Jenny Lind, 5497
Goldsmith, Oliver, epitaph on Burke, 4102
Goldsmith, Oliver, his life, 1732
 pictures, 1725, 1731, 4099, 4681
 poems: see **Poetry Index**
Gold-thread, description, 2339
Golf, field golf, 724
 how to play, and picture, 3169, 3170
Golf ball, why it is crinkled, 5853
Goliath heron, 1954; picture, 1950
Gong, its sound, 3756
Good Friday, holiday in some states, 4470
Goodsell, Dr. G. W., companion of Peary, 5212
Goodwin, Rev. Hannibal, invented celluloid
 film, 5084
Goodwin Sands, 1413, 3971
 Goodwin Sands lightship, picture, 4428
Goodyear, Charles, vulcanised rubber, 2669, 5678
 welt, how it is made, 3099
 pictures, 3099, 3103, 3104, 3106
Goody Twoshoes, story, with picture, 5157
Goose, birds of goose family, pictures, 1959
 goose with the golden eggs, fable, and pic-
 ture, 3852
 how long it lives, 2328; pictures, 1519, 1521, 3893
Gooseberry, American, 4839
 its family, 4112; picture, 651
 was once wild, 1513, 1522
Goose march, game, 2572
Gopher, animal, its habits, 672
Gordon, Charles W., his novels, 4302
Gordon, Daniel Miner, of Queen's University,
 portrait, 5235
Gordon, General, campaign in China, 114
 picture, 4170
 work in Egypt, 4260
Gordon College, at Khartoum, 4260
Gorgas, Dr. W. C., at Panama, 5634
Gorge, how it is formed, 407
Gorget bird of paradise, 1738; picture, 1742
Gorgon, turned people to stone, 1049
Gorilla, 601, 3076; pictures, 603, 3677
 why a full grown gorilla has never been cap-
 tured, picture, 6150
Gorse: see **Prickly furze**
Goshawk, 1846, 3038; picture, 1845
Gota Canal, 3600
Gotham, how it got a bad name, story, 4130, 4705
Gothenburg, a port of Sweden, 3600
Goths, conquest of Rome, 3012, 5268
 defeated by Narses, 2913
 defeated the Romans, 2522
 in Iberian Peninsula, 3352
 pictures, 2913, 5263
Goujon, Jean, sculptor, 4162
Gould, Hannah: see **Poetry Index**
Gounod, Charles Francois, composer, 3252
Gourgand, General, friend of Napoleon, 1298
Gourgues, Dominique de, captured forts in
 Florida, 262
Gout, brooklime as remedy, 4968
Government, the Canadian, description of, 1325
Government, The United States, description
 of, 1593
Gracchi, mother of, story, and picture, 2632
 the famous Roman brothers, 416
 tried to reform Rome, 5265
Grace Church, picture, 4309
Grackle, bronzed, 3042
Gradenigo, Pietro, doge, 1252
Grafting, use in making new varieties of
 plants, 3486
Graham, Sir Robert, murdered James I. of
 Scotland, 3086
Gramme, the unit of mass, 3671
Gramophone, how it works, 3091
Grampus, whale, 1082, 1086; picture, 1083
Gran, Hungary, home of first Christian king, 5712
Granada, Moorish province in Spain, 3354
 besieged, 3356
Grand Falls, New Brunswick, suspension
 bridge and picture, 30
Grand Trunk bridge over Niagara, picture, 4094
Grand Trunk Pacific Railway, history of, 2262
Grand Trunk Ry. of Canada, history of, 2261
Grandmother, her school, picture, 193
Granicus, battle of, 1306
Granite, rock, 410, 4246, 5198
 in Canada, 5600
Granny knot, how to make, 235
Granny's Wonderful Chair, stories by Frances
 Browne, 1043, 1471; with picture, 1043

INDEX

- Granny's Wonderful Chair**, cobblers and the cuckoo, 2297
Fairyfoot, 4001
greedy shepherd, 1046
lords of the grey and white castles, 1897
merry cobbler and his coat, 2372
Merrymind, the little fiddler, 4375
Grant, Colonel James, explored Africa, 284
Grant, Sir Robert, wrote a hymn, 2000
Grant, Ulysses S., administration, 3537
 at Shiloh, Fort Henry, etc., 2013
 at Vicksburg, 2016
 elected president, 2024
 from the Wilderness until the end of the war, 2019-2022
 in command of Army of the West, 2018
 life, 796
 monument to, 5515
 picture, 787, 2023, 3532
 trip around world, 2417
Grape, 642; picture in colour, 646
 what is the bloom on it, 5849
Grape-fruit, picture in colour, 641
Graphite, a form of carbon, 3979
 in Canada, 5600
 used in lead pencils, 4746
 where it is found, 745
Grasmere, picture, 3253
Grass, all grasses flower, 2078
 blue-eyed, 3051
 how it grows everywhere, 2975
 how it is made, 3862
 importance as food, 2923
 its life-story, 1331
 pictures, 1331, 1333, 2976
 why it turns yellow when cut, 5250
Grasse, Count de, commander of fleet, 992
Grasshopper, and the ant, fable, 2141
 how it differs from the locust, 3141
 picture, 3078; in colour, face 3140
Grass of Parnassus, description, 5036
 flower, 4112
 picture, 5034
Grass-pea; see Pea, grass
Grass snake, 1378
Gravel, forms part of earth's crust, 2387 -
 made by water, 407
Graves, Alfred Percival; see Poetry Index
Graves, Collins, saved people of the valley of
 Williamsburg, 4958
Graves, John Woodcock, author of song,
 5494
Gravitation, affects water, 33
 balances the sun and planets, 2280
 brings a stone to earth, 4549
 can we pull against it, 5792
 electricity theory, 5256
 explanation of law, 303, 308
 force in the moon, 2224
 Galileo's discovery, 304, 3551
 increases rate of falling bodies, 3432, 3672,
 3814
 in relation to a burned candle, 5635
 its force varies, 3813
 has helped to shape the earth, 404
 how a tree resists it, 3861
 how it affects us in walking, 3437
 how it is opposed, 3544
 keeps the air round the earth, 5024
 large bodies attract smaller ones, 3865
 law discovered by Isaac Newton, 303, 1944,
 2426
 makes the sun shrink, 426
 not so powerful as cohesion, 618
 scales and globe showing effect of earth's
 gravitation, picture, 3551
 the pull of the earth, 3835
 the working of the law, 3547
 universal law, 3761
 use of law in astronomy, 1948
 weight depends on it, 3234, 3671
 what would happen if it ceased, 1577
 what would happen to penny if it got beyond
 pull of earth, 5958
 which holds the sea in place, 5687
Gravity, can coal-gas escape from it, 5849
 See Gravitation
- Gray, Capt. Robert**, discovery of Columbia
 River, 1396
- Gray, Elisha**, patented a telephone, 4317
Gray, Stephen, experimented with electricity,
 2115, 4314
Gray, Thomas; See Poetry Index
Gray's Elegy, twenty-five ways to transpose
 one line, 5457
Grease, how to remove, 4456
Great auk, 48, 1630, 1428; picture, 1425
Great Barrier Reef, Australia, 1466
Great Bear, called the Plough, 2612
 legend of the Great Bear, 3314
 made up of fixed stars, 146
 pictures, 152, 2611, 2613, 2617
Great Belt, between Danish islands, 3598
Great bird of paradise, 1738; picture, 1742
Great Dividing Range, in Australia, 1358
Great Eastern, ship, 2476; picture, 2473
Great Expectations, story of the novel, 2435
Great Gable Mountain, picture, 5017
Great Meadows, battle of, 882
Great northern diver, 1632; picture, 1631
Great Onontio, The, Indian name for Fron-
 tenac, 539
Great Paul, largest bell in London, 1541
Great Salt Lake, 1993, 3072
Great titmouse, pictures, 1744, 2217
Great Tom of Westminster, 1536
Great Trek, 1769
Great valerian, 4970; picture, 4965
Great water beetle, picture, face 3140
Great Western, ship, 74, 2472; picture, 2473
Greater Hellas, Grecian colonies, 5124
Greathed, Mr., commissioner, 1914
Greece and Greeks, arch not used in buildings,
 620
 astronomy studied, 1655, 1942
 belonged to the Venetians, 3158
 competitions in music and acting, 5004
 conquered by Mohammed II, 3156
 conquered the Punjab, 1700
 flag, picture, in colour, face 1640
 glory that was Greece, 5121
 great men of Greece, 1301
 Greek sailor, picture, 3225
 history, 3150, 3219, 5121, 5124, 5129, 5130
 influence on the world, 5126
 love of music, 4607
 pottery, 5126
 power in Egypt, 279, 4790
 retreat from Cunaxa, 5064, 5076
 sculpture, 4160, 5123
 stories of Greece, 2301
 temples, 5128
 thinkers of Greece, picture, face 1301
 war with Phoenicians, 5129
 war with Rome, 5262
 war with the Persians, 5060
 war with Trojans, 67
Greediness, what it is, 5958
Greedy shepherd, the, story, and pictures,
 1046
Greek language, study revived, 3156
Greely, Lieutenant, old camp discovered, 5214
Green, J. B., Death of Cromwell, an extract,
 5001
 the death of a queen, an extract, 5502
Green, Kitty, and the giant, story, 2377
Green, colour, 1935, 4508
Greenaway, Kate; see Poetry Index
Greenbottle fly, picture, face 3140
Greene, Albert Gorton; see Poetry Index
Greene, General Nathanael, in the revolution,
 584, 992; pictures, 985, 4153
Greene, Mrs. Nathanael, suggested cotton-gin,
 1825
Greenfinch, 2058; picture, 2060
Greenland, discovered, 257
 its exploration, 3594, 4724
Greenland shark, 2444
"Green Mountain Boys," under Ethan Allen,
 384, 1820
Greenough, Horatio, sculpture of, 4841
Greenwich Observatory, 1662
Greenwich time, what it is, 3036
Gregory the Great, pope, kept the Lombards in
 check, 3014
 sent Augustine to England, 430, 2329
 wrote hymns, 1995
Gregory VII., pope, and Henry IV. of Germany,
 picture, 4714
 quarrels with the kings, 2526

INDEX

Gregory VII., tried to start a holy war, 1586
Grenada Island, Carib's last stand, 1877
 its harbour, 1878
 plague of ants, 2950
Grenville, Sir Richard, 3662, 4205
 commander of the *Revenge*, 5394
 quarrels with the Indians, 6131
 visits Roanoke with supplies, 6132
Gresham, Sir Thomas, his crest, 4522
Grete, in a story of Shetland, 5419
Greville, Sir Fulke, his epitaph, 467
 poem: see *Poetry Index*
Grey, Lady Jane, 845, 2534, 2966
Grey, Lord, governor-general, 1248
Grey, Sir George, in New Zealand, 4038
Grey, colour, 1935, 4508
Grey-hen, a heath-fowl, 1515
Grey parrot, picture, 1743
Grey rat, picture, 771
Grey, Sir G., a savage goes a-hunting, an extract, 5902
Grey shoulder knot moth, picture, 3413
Grey (the) Terror, the first boy who played with a dog, 6195
Griffin vulture, picture, 1841
Grilse, a young salmon, 2680
Grimm brothers, their lives, 1468
Grimston, Lady Anne, her grave, picture, 1673
 her story, 1673
Grindelwald, pictures of the valley, 5671, 5673, 5674
Griotlid, a road in Norway, picture, 3599
Griselda, Canterbury Tale, 437
Grislybeard, King, story, 1189
Gristle, is cartilage, 2439
Groot, Hugo van: see *Grotius*
Grosbeak, cardinal, bird, 2061
 varieties in Canada, 3491
Grotius, picture, 2629
Ground-ivy, description, 4292
 picture, 4291
Ground-nut, in Canada, 2841, 5193; picture, 5188
Groundsel, its family, 4112
Grouse, American, 1518
 Canadian, 1518, 3037
 red, 1518; picture, 1517
 ruffed, 1518, picture, 1517, 3037
 its life-story, 1515; picture, 1517
Grover, W. O., improvement of sewing-machine, 1624
Growth, its cause, 4745
 rate of growth varies, 4113
 why do we not grow big all at once? 5640
 why it stops, 2454, 3979
Grubs, how to get rid of them, 3278
Guadalquivir, river in Spain, 3352
Guadiana, a river, 3352
Guam, taken for coaling station, 2190
Guanaajuato, in Mexico, 4386; picture, 4391
Guard the block, game, 3614
Guatemala, 4392; pictures, face 1640, 4387
Guayaquil, canoe market, picture, 4575
Gudgeon, used as bait, 2681; picture, 2679
Guelderland, in the Netherlands, 3458
Guelder rose, 3952; description, 4292
 picture, 4291
Guelphs, party in Italy, 3018
Guericke, Otto Von, electric light discovery, 2114; with portrait, 2113
 metal cups experiment, picture, 2121
Guerrière, La, and Constitution, 1398, 2901
Guesclîn, Bertrand du, and picture, 2806
Guevi, small antelope, 382; picture, 381
Guiana, British Guiana's heavy rainfall, 1878
 dependent states, 4500, 4576
Guildhall, London, and pictures, 1318
Guilford Court House, battle of, 992
Guillemot, bird, 1630; picture, 1631
Guillotine, used for executions, 2272
Guinea Coast, partly British, 1765
Guinea-fowl, 1520; picture, 1519
Guinea-pig, different kinds, 506
 hair, through microscope, picture, 2323
 how to keep them, 4458
 pictures, 507
Guinevere, King Arthur's queen, 870, 3311
 pictures, 863, 1977, 3311
Guiscard, Robert, 1587
Guise, Duke of, story of, 3472
Gull, pictures, 51, 1629, 1744
 the various kinds, 1628

Gullet, what it is, 2208, 2343
Gulliver's Travels, and pictures, 1309, 1314
Gum-tree, the eucalyptus, 1364
Gun, a son of a gun, story, 3348
 explosives used in firing, 5857
 how it illustrates laws of motion, 3470
 how it is fired, 5855
 how manufactured, pictures, 5858, 5860, 5862
 its power in action, picture, 5855, 5866
 picture, 2227
 putting on a big gun's jacket, picture, 5861
 strengthened by wire, 5857
 why it makes a noise, 2228
 why the flash precedes the noise, 777
Gundulf, built the Tower, 1158
Gunpowder, what it is made of, 2223
Gunpowder Plot, story of, 1022, 1791
Gurdun, Bertrand de, shot Richard I., 2001
Gustavus Adolphus, king of Sweden, closed the Baltic to the Russians, 3628
 endowed Upsala University, 3600
 gained lands from Germany, 3596
 helped Protestants in Germany, 2528
 praying for victory, picture, 3593
Gustavus Vasa, king of Sweden, 3596
 founded Helsingfors, 3753
 planned the Gota Canal, 3600
 with a drinking party, picture, 3593
Gutenberg, John, life, 3568; portrait, 3567
Guy, of Lusignan, king of Jerusalem, 1589
Guy, of Warwick, story of his life, 1322
Guy Fawkes Day, English holiday, 4463
Guy Mannerling, a novel, 1495, 1603
Gymkhana, for Christmas, 2252
Gymnastics, Swedish system, 3600
Gypsum, a form of salt, 1800
 in Canada, 5601
Gyroscope, how does it work, 89, 6164
 picture, 89

H

Haakon V., king of Norway, 3082
Haakon VII., king of Norway, 3598
Haakon VII Plateau, in Antarctic, 5054
Haarlem, besieged by the Spaniards, 3460
 town in Holland, 3456, 3458
Habeas Corpus Act, 1028
Habitat, of a plant, 3949
Habitant, his family, 5876
 its original meaning, 5875
Haddock, fish, and picture, 202, 203
Hadrian, emperor, 532; portrait, 533
Hadrian's wall, 532
Hæmoglobin, what it is, 1384, 1665
Hague, The, capital of Holland, 3456
 has beautiful Japanese work, 366
Hall, made of ice crystals, 2073
Hall Columbia, history of song, 2956
Hainault, lords of, in Netherlands, 3453
Hair, its use, 156, 2080
 magnified hair, picture, 1961, 1963
 the girl who sold her hair, story, 3168
 what the hair is, 1961
 why hair turns grey, 2453
 why it does not hurt when cut, 3864, 4121
 why it goes on growing, 3864
 why it stands on end with fright, 4233
Hair grass, picture, 2982
Hair-tidy that costs a penny, 5897
Hairpin work, and picture, 4459
Haiti: see *Hayti*
Hake, a fish, and picture, 201, 203
Hakon, kings of Norway: see *Haakon*
Halavi ray, picture, 2449
Hale, Nathan, life and death, 3811
 statue of, 4850; and picture, 3810
Halevy, Ludovic, his story, *The Abbé Constantin*, 4761
Half-hitch, how to make, and picture, 3283
Half Moon, the, rebuilt, 268
Halibut, fish, 201, 206; picture, 205
Halifax, Nova Scotia, fortified harbour, 5601
 picture, 3901, 5602
 town of Nova Scotia, 212
Hall, Captain, his book on Eskimos, 4724
Hall, G. H., as inventor, 2667
Hallam, Arthur Henry, friend of Tennyson, 2153, 3959

INDEX

- Halley, Edmund**, discovers comet, 2497
 portrait, 1555
 story of his life, 1602
- Halley's comet**, 1662; picture, 2495
- Hallowe'en**, its meaning, 5900
- Halo**, of moon, what makes it, 5790
- Halogen**, means salt-maker, 1291
- Halos**, origin of, 5650
- Hals, Franz**, his picture, The Laughing Cavalier, 4591
 portrait painter, 4587
- Ham**, means home when at end of a name, 427
- Hamburg**, joined Hanseatic League, 2526
 trade and shipping, 2750; with picture, 2746
- Hamerton, S. C.**: see Poetry Index
- Hamilcar**, Carthaginian general, 5262
- Hamilton, Alexander**, during Revolution, 1339,
 1392-94; killed, 1398; portrait, 1391, 1395
 portrait, bust of, 4844
- Hamilton, Dr.**, on land-birds, 3037
- Hamilton, Patrick**, died for his faith, 5068
- Hamlet**, the story of the play, 479
 where his tomb is, 3600
- Hammer**, breaks stone when wood will not, 2880
 how to use, and picture, 338
- Hammerfest**, town of Norway, 3601
- Hammerhead**, bird, 1956; picture, 1957
- Hammer-headed shark**, and picture, 2444, 2445
- Hammock**, how to make a garden hammock, 6066
- Hammurabi code**, 3399, 4976
- Hamoaze**, mouth of Tamar, picture, 4436
- Hampden, John**, and unjust taxes, 1024
 how he opposed Charles I., 1894
 portrait, 1896
- Hamper**, basket hamper making, 2131
- Hampton Court**, Wolsey's palace, 845
- Hancock, John**, arrested, 982
 portrait, 987
- Hancock, Thomas**, worked at vulcanising process, 5678
- Handel, George**, life, 3243; with pictures, 3243, 3245
 love of music, 3292
- Hands**, bones, picture, 2545
 effect of quicksilver, 3694
 how hands are formed, 2545
 how to make moving figures with, and pictures, 5103
 how to make shadows on the wall, 5201
 injured hands, 4749
 strength of right and left hands, 5020
 the lines on our hands, 1134, 2460
 warm after playing with snow, 1643
 why some people use the left, 1989
- Handspike**, for making knots, 235
- Handspike hitch**, and picture, 3233
- Hankau**, tea trade centre, 115
- Hannibal**, army crossing the Rhone, picture, 5263
 crossed the Alps, 2876, 5264
- Hanover**, interesting district, 2573
- Hanover, House of**, 1496, 2528
- Hanoverian kings**, reign, 2540
- Hans**, in story of Rosy Apple, 5345
- Hanseatic League**, formation, 2526
 trade of its towns, 3453
 war with Scandinavia, 3594
- Hansel and Grethel**, story, and pictures, 1468
 3305
- Hansom, Joseph Aloysius**, inventor of hansom cabs, 6107
- Hanway, James**, use of umbrella, story, and picture, 3097
- Happiness**, its effect on the body, 4746
- Hapsburgs**, a prince as king of Hungary, 2854
 Austrian house founded, 2527
 called to the throne of Hungary, 5712
 came into power, 2851
 unpopular in Switzerland, 2964
- Hardanger Fiord**, in Norway, 3602
- Hard Times**, story of the novel, 2434
- Hardie, C. M.**, his pictures of Burns, 3902
- Hardy, Thomas**, famous writer, 2316
- Hare**, changes its coat in winter, 1777
 hare and tortoise, fable, and picture, 462
 how an eagle caught a hare, 1842
 how it escapes, 384
 picture, 383
- Hare and hounds**, on horseback, game, and picture, 2972
- Harebell**, description, 4614
 picture, 4611
- Larfleur**, captured by English, 2706
- Harleian manuscripts**, 1162
- Harlem Heights**, battle of, 986
- Harmony**, compared with discord, 2620
 proper arrangement of sounds, 4607
 what a harmony is, 4859
- Harold**, king of England, 434, 2702, 5942
 pictures, 435
- Harold Hardrada**, set fire to old Scarborough, 1320
- Harp**, 1015
- Harper's Ferry, Va.**, raided by John Brown, 2010, 3536
- Harpoons**, made by the Cave men, 192
- Harpichord**, kind of piano, 1015
- Harrier**, a falcon that eats mice, 1846
- Harriman, Alice**: see Poetry Index
- Harris, Joel C.**, date of birth, 1474
 tales of Uncle Remus; see Brer Rabbit
- Harrison, Benjamin**, administration, 3537
 as president, 2413
 picture, 3532
 recommendation for celebration of Columbus day, 4464
- Harrison, William Henry**, administration and death, 3535
 as president, 1830
 defeats English, 746, 1399
 opposes Tecumseh, a picture, 1821
 picture, 3532
- Harrogate**, a health resort, 1109
- Harte, Bret**, his life, 1487; portrait, 1475
- Hartford, Conn.**, founded, 524
- Harun al Rashid**, caliph, 2739, 3873
- Harvard, John**, bequest to Harvard College, 518
 statue of, 4846
- Harvard College**, established, 518
- Harvest mite**, attacks man, 3147
- Harvest mouse**, 770; picture, 771
- Harvest spider**, picture, 3299
- Harvey, William**, discoveries about circulation of the blood, 1446, 1579, 2320, 5751, 6092
 his life, 4193; pictures, 4194, 4195
- Hasdrubal**, founded Carthage, 3357
- Hassan**, sultan, mosque in Cairo, 4256
- Hasting**, led Normans into Italy, 3014
- Hastings**, battle of, 436
- Hastings, Warren**, attacked by Burke, 4100
 in India, 1706
- Hat**, how high is the, 5666
 of paper, and picture, 1925
- Hatcher, Julia**, her heroism, 4831
- Hathaway, Anne**, her marriage, 3331, 5963
 pictures, 5748
- Hathor's temple**, pictures, 4787, 4791
- Hat-shep-su**, queen of Egypt, 4787
- Hatteras Inlet**, taken, 2014
- Hauy, Valentine**, how he invented a method of reading for the blind, 1982
- Havelock, Sir Henry**, relieved Lucknow, 1099, 1706
- Havergal, Frances Ridley**, hymn-writer, and portrait, 1998, 1999
- Hawaii**, annexed, 3538
 description, with pictures, 2181, 2183
 in the Hawaiian Isles, 2491
 native musicians, picture, 1463
- Hawarden Castle**, Gladstone's home, 2387
- Hawfinch**, egg of, picture, 1744
- Hawk**, different kinds of hawks, 1846
 enemy of the hoopoe, 1748
 sparrow-hawk, 1846, 3039; pictures, 51, 1744, 1845
 varieties in Canada, 3038
- See also Goshawk; Osprey
- Hawke, Edward Lord**, defeated the French, 1094
- Hawkes Bay**, New Zealand province, 1462
- Hawkesbury River**, bridge, picture, 28
- Hawk owl**, 1848; picture, 1847
- Hawkebee, Francis**, father, made experiments with air, 2114
- Hawkebee, Francis**, son, made scientific instruments, 2114
- Hawkshawe, Mrs.**: see Poetry Index
- Hawthorn**, pictures, 3449

INDEX

Hawthorne, Nathaniel, and the Alcotts, 2047
 his life, 1470, 1479
 Marble Faun (the), extract from, 5432
Hay, John: see Poetry Index
Hay, how it is cut, with picture, 4088
 production of in U. S., 2422
Haydn, Joseph, pictures, 3245, 3251
 the story of his life, 3246
Hayes, Rutherford B., administration, 3537
 election of, 2417
 picture, 3532
Hay-fever, how it is caused, 1332
Hay-games, and picture, 4136
Hayti, flag, picture, in colour, face 1640
 its other names, 1877
 rebellion of slaves, 1914
 where Columbus built a fort, 58
Hazel, its nut, picture, 1969
 nuts and wood, 1965
 tree, 1965
Hazlitt, William, his life, 4683
 portrait, 4675
Head, and the limbs, 2541
Headache, are headache powders good things?
 5643
 how we get it, 4232
 what causes, 5643
 what makes a sick-headache, 5643
Health, effect of hypnotism, 5170
 how to eat and be healthy, 2343
 our ancestors' health, 2799
Hearing, and speaking, 3953
 how it is governed by the brain, 3777
 the limit of hearing, 5174
 the marvel of hearing, 3866
 what it is, 509
 where the sense of hearing is, 3721
 why we hear better at night, 2504
 why we hear better over water, 2455
 why we hear better with eyes shut, 4598
 why we hear little when asleep, 1575
Heart, effect of fear on its beat, 1576
 Jack's wonderful pump, 6091
 pictures, 1579, 1581
 the living pump, 1579
 what makes it beat, 1576
 why it beats faster when we run, 5016
Heart of Midlothian, The, extract about tree
 planting, 3077
 story of the novel, with picture, 1757
Heartsease, description, 4616
 how bees carry pollen to, 45
 picture, 4612
Heat, big things take longest to cool, 3431
 conduction of heat, 1061, 4183
 different kinds of heat, 4179
 difficulty of getting rid of heat, 4050
 elements that give off heat without burning,
 4322
 fatal to living things, 4052
 finds its own level, 4183
 friction produces heat, 3094
 heat and temperature, 4473
 hot things and cold things, 4047
 how heat makes things expand, picture,
 4369
 how heat travels, 4319
 how heat works for us, 4365
 how to measure heat, 4473
 importance of laws of heat, 4476
 intense heat in the moon, 2226
 longer than one-half full, 3430
 makes things expand, 658, 1372
 production by chemical changes, 4476
 production by machines, 4366
 rays of, bent by lenses, 2880
 state of movement in the ether, 3466, 4048
 sun and planets losing heat, 2283
 the sense of heat, 1964
 the sun's temperature, 2082
 the ways heat is given out, 3377
 things transparent to heat, 4320
 travels at the same speed as light, 1774
 what convection of heat is, 1061, 4181
 what heat is, 1061, 1421, 2508
 what latent heat is, 4473
 what sensible heat is, 4474
 what specific heat is, 4475
 why brass gets hot when rubbed, 2508
 why India is hotter than Alaska, 1060
 why we look red when we are hot, 3695

Heath, John E., as inventor, 2668
Heath, cross-leaved, picture, 4615
 purple, picture, 4615
 the heath family, 4112
Heather, source of briar-wood, 5524
Heavens, the, path of earth and moon, picture,
 2219
 pictures, 3031, 3687
Hebe, whom Hercules married, 3314
Heber, Eginald, bishop, his life, and portrait,
 1997, 1999
Hebert, Louis Philippe, statue of Maison-
 neuve, 2246
Hectograph, how to make, and picture, 1287
Hector, Sir, knight, 67, 867, 1680
Hecuba, Priam's wife, 67
Hedge-garlic, description, 4424
 picture, 4420
Hedgehog, 506
 pictures, 507, 3893
Hedge-sparrow, 2057; egg, picture, 1744
Hedin, Dr. Sven, explored the Tarim River,
 3934
 in the Gobi Desert, 3074
 pictures from his book, 3937, 4124
 what he said about sand deserts, 4122
Heels, are high heels harmful, 5960
Hegira, the flight of Mohammed, 3876
Height, alteration in men's height, 2673
 when we are tallest, 2455
Heilmann, Andrew and Anton, printers, 3569
Heine, Heinrich, life and writings, 5222
 portrait, 5217
Heir and the will, story, with picture, 5159
Hekla, Mt., volcano in Iceland, 2075, 3598
Helen, the cause of the Trojan War, 67
Helena, St., history of, 5321
Heliograph, what it is, and picture, 4313, 4318
Hellum, an element in men's height, 2673
 can be liquefied, 4050
 found in the sun, 5023
 made from radium, 639, 1419
Hell Gate, was blown away, picture, 6005
Hellebore, black: see Christmas Rose
 false, 3052
 stinking: see Setterwort
Kelleborine, white, an orchid, 4423
Hellespont, crossed by the Persians, 5062
 Persians crossing, picture, 5172
Helmholtz, Hermann, studied the tuning of
 resonators, 4915
Helsingborg, town of Sweden, 3600
Helsingfors, its founder, 3753
Helsingor, town of Denmark, 3600
Helvetian Republic, 2967
Hem, how to make it, 456, 835
Hemans, Felicia Dorothea, life and work of,
 with pictures, 5468, 5470

See also Poetry Index

Hemispheres, pictures, 1751
Hemlock, its family, 4112
Hemlock-tree, description, 5438
 picture, 5444
Hemlock water dropwort, 4970
Hemp, how made into rope, and pictures,
 3992
Hemp agrimony, 4970; picture, 4967
Hem-stitching, and picture, 2351, 2352
Hen, and chickens, picture, 1513
 hen and the fox, fable, 4008
 how long it lives, 2323
 its instinct, 4549
 number of toes, 1985
 the real mother, 2229
 what its eggs are made of, 1867
 why hens do not crow, 4117
 why she cackles after laying an egg, 6164
Henbane, description, 4417
 picture, 4416
Hennebont, besieged, 2478
Henrietta Marie, daughter of Henry IV. of
 France, 2070
 wife of Charles I., 1022, 1887
Henry, prince of Brunswick, 3883
Henry, of England, eldest son of James I.
 1022, 1887
Henry I., king of England, 5942
 built part of the Tower, 1158
 his character, 2702

INDEX

- Henry I.**, his reign, 592
how his only son was drowned, 2477
portrait, 2710
- Henry II.**, king of England, 2532, 5943
his character, 2702
his reign, 594
portrait, 2710
struggled against the Church, 4713
- Henry III.**, king of England, 800, 5943
his reign, 598
how he enriched Westminster, 4636
king for fifty years, 2704
pictures, 599, 4636
- Henry IV.**, king of England, 754, 5944
seized the throne, 2706
- Henry V.**, of England, conquered half of France, 120, 2068, 2706
his reign, 754, 5944
imprisoned by Judge Gascoigne, story, and picture, 4830
pictures, 2705, 2721
soliloquy, 5360
- Henry VI.**, king of England, 754, 5946
portrait, 2710
- Henry VII.**, king of England, 5946
chapel in Westminster, 841
ended the Wars of the Roses, 2533
forced money from the people, 842
portrait, 2710
united houses of York and Lancaster, 756, 2706
- Henry VIII.**, king of England, 5946
character, 2706
reign, 844
persecuted the Protestants, 5067
pictures, 840, 2707
- Henry**, prince of Navarre, as a boy, 1654
- Henry IV.**, king of France, 2070
- Henry IV.**, of Germany, did homage to the pope, 3014
quarrelled with Gregory VII., 2526
- Henry, St.**, and Finland, 3630
- Henry, Patrick**, against Constitution, 1390
- Henry Esmond**, the story of the book, and picture, 3265
- Henry the Navigator**, his discoveries in Africa, 4252
who he was, 3354
- Henson, Matt**, attendant of Peary, 5212
at the Pole, 5213
- Hepatica**, description, 2837
- Hera**, Greek goddess, 2301
- Heracles**, defeated the Persians, 3878, 4256, 5066
fought against the Persians, 3152
sent presents to Mohammed, 3152
- Heraldic rose**, picture, 3428
- Herb-bennet**, 4966
- Herbert, George**, hymn-writer, 2000
in his garden, picture, 1997
poems: see Poetry Index
- Herbivorous animals**, 2099
- Herb-robert**, description, 3051, 4111, 4285
picture, 4290
- Herbs**, what herbs to sow, 3176
- Herculeanum**, wall paintings found, 4585
- Hercules**, and the countryman, fable, with picture, 5205
his twelve labours, 3314, 5163
legends of Hercules, 3314, 3351
picture, 5163
- Heredity**, what it means, 1987, 3089
- Hereford Cathedral**, chained books, picture, 3567
- Hereward the Wake**, story of, 117
- Hermann**, defeated the Romans, 2522
Hermann and the priests, picture, 2523
- Hermit crab**, 1410; pictures, 1416
- Hermit humming-bird**, 1740
- Hero**, daughter of Ænophon, 3313
- Herod**, king of the Jews, 6220
- Herodotus**, an early historian, 279, 5217
his history, 4790, 4971, 5064
- Heroes**, a race with death, 4958
brave Grizel Hume, 5615
of science, 3200
of the nations, 117
partners, 4959
quiet heroes of the world, 625
village of heroes, 625
- Heroine**, of the Southern Seas, 2491
- Heron**, how long it lives, 2328
nests of, 5778
pictures, 1744, 1950
the heron, the cat, and the bramble bush, legend, 2744
what kind of bird it is, 1954
- Herrick, Robert**, poems: see Poetry Index
wrote Cherry Ripe, 3743
- Herring**, how it is formed, 2437
how many eggs it lays, 201
how they are caught and prepared, 3768
its habits, 204
pictures, 205, 3768
the poisonous West Indian, 210
- Herringbone stitch**, and picture, 935
- Herring gull**, 1628; picture, 1629
- Herrman, Mrs.**, lumber and furniture merchant, 3066
- Herschel, Caroline**, helped her brother in astronomy, 2429
her life, 1664
portrait, 1655
- Herschel, Sir John F. W.**, catalogued the stars, 1664
portrait, 1655
- Herschel, Sir William**, discovered Uranus, 2234, 2429
his life, 1364; portrait, 1655, 1938
studied the stars, 309
- Herzegovina**, province, 2860, 3222
- Hesperides**, garden of, 1050, 3314, 5164
- Hessellius, Gustavus**, an early artist, 4147, 4148
- Hessians**, hired by English, 984
- Hextable**, battle of, 195
- Hiccough**, how to stop it, 1633
- Hickory**, shagbark, 5442; with picture, 5443
shagbark nuts, 1965
- Hickson, W. E.**: see Poetry Index
- Hidalgo**, rebelled against Spaniards, 4386
- Hide-and-seek on the Hearthrug**, game, 237
- Hideyoshi**, conquered Korea, 366
- Hieroglyphics**, history of Darius written on rocks, 5060
how we learned to read them, 4782, 5100
Sumerian picture writing, 4974
used by the Egyptians, 678
writings of Assyria, 4972
- High-hole**, a woodpecker, 3040
- High tide**, how it is formed, 2281
- Hildebrand and Undine**, in story of a water nymph, 5518
story, 4005
- Hill, Bowland**, the penny post, 1099, 3706
- Hills**, why they look blue, 3381
why we want to run down hills, 4750
- Himalaya Mountains**, origin, 403
spring from the Pamir Plateau, 3931
their length, 4497
- Himis**, has a famous monastery, 3940
- Hindooism**, religion of India, 1700
what it teaches, 1550
- Hindu Kush Mountains**, 3932
- Hindustan**, conquered by the Aryans, 1699
northern half of India, 1546
- Hints and tricks for odd moments**, 6014, 6068
an easily made apple-picker, 6014
the rabbit's ears, 6014
- Hip-joint**, its strength, 2546; picture, 2544
- Hipparchus**, great astronomer, 1656
- Hippocampus**, name for sea-horse, 210
- Hippocides**, who he was, 2301
- Hippocrates**, his life, 4195
pictures, 4194, 4195
visited Democritus, 3163
- Hippolyte**, whose girdle Hercules captured, 3314, 5164
- Hippopotamus**, early existence, 49, 50
education of young, 5482
how captured, 6148
how it is useful, 51
its life-story, 998
pictures, 51, 994
where it can live, 46
why it is so stupid, 3565
- Hiram**, king of Tyre, 5124
- His Master's Son**, 5096
- Hispania**, Roman name for Spain, 3352
- Hispaniola**, name for Hayti, 1877

INDEX

- History**, how to keep a history notebook, 5356
- Hitches**, how to make, and pictures, 3283
- Hittites**, wars with Mesopotamia, 4974
- Hoarseness**, its cause, 2455
- Hoatzin**, bird, and picture, 1430, 1431
- Hobart**, the capital of Tasmania, 1362
- Hobbes, Thomas**, his life, 4620
pictures, 4619, 4625
wrote on association of ideas, 4940
- Hobby**, a falcon, 1846
- Hochelaga**, on site of Montreal, 536
- Hockey**, how to play, and pictures, 4993
in Canada, 5210
- Hodgson, John**, carried first safety lamp in mine, 5787
- Hoe**, used for weeding, 233
- Hofer, Andreas**, a patriot of the Tyrol, 2854
buried in Innsbruck, 6260
prisoner, picture, 125
rose against Napoleon, 122, 6257
- Hoffman, Dr.**: see Poetry Index
- Hogarth, William**, his picture of a shrimp girl, 763; pictures, 759, 4591
satirical painter, 764
- Hogg, James**, poems: see Poetry Index
song-writer, and portrait, 3742
- Hohenlinden**, battle of, 4360
- Hohenzollerns**, who they are, 1640
- Holderness**, after a gale, picture, 404
- Hold fast! let go!** game, 2571
- Holiday, How They Got a**, 6310
- Holiday places**, tales of, 1108, 1320
- Holidays**, why celebrated, 4463
- Holland**, became a republic, 3462
became independent, 2523
great charter granted, 3460
history, 3455
how Holland gained its freedom, 124
how the sea saved Holland, story, 3553
how the tereido did damage to, 2588
products and trade, 3462
refuge of English, 516
showing its waterways, picture, 3455
war with England, 1027, 1028, 3463
See also Netherlands
- Holland**, material, where it is made, 3458
- Holland, counts of**, their power, 3458
- Holly**, 3442; picture, 3442
sea, picture, 5191
- Hollyhock**, 1074
- Holmby House**, prison of Charles I., 1889
- Holmes, Oliver Wendell**, his life, 1483; with pictures, 1475, 1483
on Burns, 3907
poems: see Poetry Index
- Holstein**, cause of many disputes, 3596
taken by Prussia, 2579
united to Denmark, 3596
- Holy Grail**, story concerning it, 871
- Holy Roman Emperor**, title taken by the Hapsburgs, 2852
- Holy Roman Empire**, came to an end, 2530
Charlemagne crowned emperor, 3014
formation, 2524
government of Switzerland, 2964
- Holy Sepulchre**, Christ's grave, 1587
- Homer**, life and writings, 67, 93, 5121, 5217; pictures, 67, 5127, 5217
- Homer, Winslow**, life and art, 4151
- Homer pigeon**, and picture, 2213, 2215
- Home Rulers**, what they require, 1096
- Homes**, of man in all ages, picture, 621
- Honduras**, flag, picture in colour, 1640
independent republic, 4392
Spain founded colonies, 4383
- Honest man**, how a sultan found an honest man, story, 2745
- Honesty**, do the wicked nearly always triumph in the world, 5686
plant, may be sown in May, 3278
- Honey**, how the ant gets honey, 2947
how we get it, pictures, 2819
- Honey-ant**, stores honey, 2948
- Honeycomb**, how it is made, and pictures, 2818, 2819
- Honeymoon**, how the custom arose, 1370
- Honeysuckle**, bush: see Diervilla
glaucous, 4839
how it guards its nectar, 3736
its flower, 3951
- Honeysuckle**, pictures, 3735, 4311, 4832
- Hong Kong**, British possession, 116, 1879
- Honorius, Emperor**, and his fowls, 2301
- Honshu**, part of Japan, 370
- Hood, Gen'l John B.**, takes over Gen'l Johnston's command, 2020
- Hood, Thomas**: see also Poetry Index
wrote Song of the Shirt, 1621
- Hooded seal**, 1090
- Hoogli River**, in India, 1548
- Hook, Robert**, made sound travel along a wire, 4317
- Hooker, Joseph**, at Chancellorsville, 2016
picture, 2017
- Hooker, Sir Joseph**, and chickweed, 3828
- Hook of Holland**, landing-place, 3456
- Hoop**, some hoop games, 4027
- Hooper, Bishop**, died for his faith, 5068
- Hoopoe**, bird, and picture, 1741, 1748
- Hop gardens**, pictures, 3896
- Hopewell Cape, N. B.**, picture, 4240
- Hopi**, Indians of Arizona, with pictures, 3683
- Hopkinson, Francis**, author of the Battle of the Kegs, 2955
- Hopkinson, Joseph**, author of Hail Columbia, 2956: see Poetry Index
- Hop-o'-my-thumb**, story, and pictures, 1973, 1975
- Hop-scotch**, game, and picture, 3920
- Hop, skip, and a jump**, game, 3614
- Hopson, Sir Thomas**, his youth, 4333
- Horace**, great poet, 528, 5218, 5266
picture, 5216
- Horatius**, saved Rome, 1403
- Horhound**, picture, 3831
- Horizon**, how its distance alters, and picture, 2332
- Horn, Count**, story of his death, 5171
- Horn, Cape**, south of South America, 4497
- Hornbeam**, description, 5442
picture, 5441
- Hornbill**, bird, and picture, 1746
nests of, 5784
- Horned lizard**, picture, 1223
- Horned pheasant**, picture, 1516
- Horned poppy**, 4110
- Horned toad**, 1220; picture, 1228
- Horned viper**, with picture, 1379, 1380
- Hornet**, picture, face 3140
- Hornet, the**, and Peacock, 1398, 2902
- Horrocks, Jeremiah**, observed the transit of Venus, and pictures, 1661
- Horse**, and the ass, fable, 2849
burdening horses, 3235
cruelty of bearing-reins, 158, 159
different kinds of horses, 270
disappearance of, 5570
do a horse's eyes magnify? 5381
drawing a horse from squares, 1073
fox and horse, story with picture, 957
hoax concerning, 5309
horse and the groom, fable, with picture, 1793
how he developed, 6040
how long a horse lives, 2328
how to draw a spirited horse, with picture, 3726
its breeding, 6044
man-eating horses, 5164
mare and foal, 5479
never forgets its former home, 5411
ponies of Norway, 6041
story of the pony that went to the blacksmith, 6048
the different parts of his body, picture, 6041
the first horse had toes, 48, 1986
the prehistoric horse, 6040
their efforts to attract attention, 6048
what it was like long ago, 48, 270
when was the horse first used, 6039
why a horse follows his master's funeral, 5650
why it wears blinkers, 5962
why they have hair, and sheep wool, 3236
wild horses of Asia, 6039
- Pictures of Horses**
- dray-horse, 271
horse with and without bearing-rein, 159
horse with its foal, 3892
how it has developed, 3681
pictures, 6042, 6046
teeth of a horse, 3045

INDEX

- Horsebot**, 3262; picture, 3257
Horse chestnut, 2836; pictures, 1970, 3653
Horsely, and picture, 3147
Horse rake, invented, 2668
Horseshoe card problem, pictures, 4667, 4778
Horseshoe Fall, a fall of Niagara, 680
Horseshoes, hung up for luck, 5794
Hosmer, Harriet, sculpture of, 4846
Hospitals, Hôtel Dieu, in Montreal, picture, 2778
 Isabella, established first field hospital, 2367
 Royal Victoria, in Montreal, picture, 1752
Hôtel Dieu, hospital in Montreal, picture, 2778
Hottentots, live in Africa, 1768, 4038
Houdon, Jean Antoine, sculptor, 4162
 statue of Geo. Washington, 4841
Houghton, Lord: see Poetry Index
Hound, the old hound, fable, 3124
Hour-glass, pictures, 1538
House, houses of Polynesia, pictures, 1465
 what the skeleton of a house is, 622
 why houses seem crooked when seen above a fire, 2230
 why it becomes dusty, 4748
House cricket, 3141; picture, 3138
House-fly, 4216, 3260
House-leek, as a rosette, picture, 3975
House paper-chase, game, 2572
House-spider, picture, 3299
House-wort, lives on other plants, 3830
How many miles to Babylon? game, 4144
How to make an hour-glass, 5894
How, when, and where? game, 237
How, Wm. Walsham, and his hymns, 1996
 portrait, 1999
Howard, Alice G.: see Poetry Index
Howard, John, 3698; picture, 3701
Howe, E., invented sewing-machine, 1622
Howe, General William, attacked General Washington, 986
 hanged Nathan Hale, 3811
 portrait, 981
 takes Philadelphia, 988
Howe, Julia Ward, author of Battle Hymn of the Republic, 2956
 life, 2048
 picture, 2043
 see Poetry Index
Howe, Lord, commander of British fleet, 986
Howitt, Mary: see Poetry Index
Howitt, William, author, 348
 poems: see Poetry Index
Howler, a monkey, 606
Huckleberry, description, 4488
 flowers, picture, 4489
Hudson, Henry, 267; discover, 218, 4722; pictures, 220, 261, 4725
Hudson Bay, English settled there, 742
Hudson Bay Country, people of the, picture, 1919
Hudson Bay Railway, building of, 2264
Hudson River, carrying water under, 5116
 explored by Henry Hudson, 267
 first seen by Verrazano, 262
Hudson River School, of painters, 4149
Hudson's Bay Company, 219, 2728; granted exclusive privilege of trading, with pictures, 5147
 organisation, 5154
 post, Fort Resolution, picture, 1917
 purchase of its rights by Canada, 1246, 5150
Huggins, Sir William, astronomer, 2862
Hughes, Thomas, his book, Tom Brown's School-days, 4063
Hugo, Victor, defence of his son, 6155
 fight with a cannon, an extract, 5593
 his book, The Toilers of the Sea, 4171
 interest in the criminal, 6155
 Les Misérables, extract from, 5362
 life and writings, 5221; pictures, 5217, 6155
 likens the soul of man to a pool, 4098
 poems: see Poetry Index
 urges Switzerland to abolish capital punishment, 6155
Huguenots, allowed liberty of worship, 2070
 allowed religious freedom in Canada, 3782
 escaped from France, 2072
 in South Carolina, 262
 persecuted in France, 2068, 2070
 Protestants, 1654, 1734
Hull, General William, at Detroit, 746
Hull, Isaac, commander of the Constitution, 2901
Hull House, started by Jane Addams, 3064
Hulls, Jonathan, his steamboat, and picture, 2463, 2469
 portrait, 2467
Humayun, king of Hindustan, and portrait, 1702
Humble bees, 45; picture, face 3140
Humboldt, Friedrich, life, 853; with portrait, 851
 on forests, 3650
 made surveys in S. America, 4505
Hume, David, a friend of Adam Smith, 4102
 friend of Rousseau, 5221
 his life, 4679
 portrait, 4675
Hume, Grizel, brave Grizel Hume, 5615
Hume, Sir Patrick, a covenant, 5615
Humerus, bone of the upper arm, 2545
Humming-bird, its life-story, 665, 1739
 nest of Californian, picture, 5417
 ruby-throated in Canada, 3053, 3489
 what it was once like, 48
Humming-bird moth, 3498
Humus, decayed vegetable matter, 3830
Hunchback, and the fairies, story, and pictures, 1106, 1107
Hundred Days, The, what they were, 2576
Hundred Years' War, 2067
Hungary, defeated by Turkey, 3154
 efforts for freedom, 124
 history, 2576, 2854, 5712
 how governed, 5712
 how to travel there, 5711
 Hungarians, picture, 3225
 ice-cavern, 2860
 joined to Austria, 2530
 pictures, 5713
 Turks driven out, 3158
Hunger, difference between greediness and, 5958
 is the best sauce, proverb, 5126
 what it is, 156, 3112, 3433
 why we do not growl when hungry, 4599
Hungerford Bridge, pulled down, 26
Hungry Forties, what were the, 5644
Huns, invaded Europe, 2522, 3933
 pillaging a Roman villa, picture, 2523
Hunt, Leigh: see Poetry Index
Hunt, William Morris, life and art, 4150
 picture by, 4158
Hunter, John, life, 4200; portrait, 4195
Hunter, William, died for his faith, 5068
Hunter and the hare, rhyme, and pictures, in colour, 4692
Hunting, of Indians, 2558
Hunting spider, its prey, 3303
Hunting wild beasts, pictures, 5723, 5725-27
Huntsman's Cup: see Pitcher Plant
Hunt the ring, game, 2571
Hunt the slipper, game, 2571
Hunt the stag, game, 4027
Hunyadi, John, fought against the Turks, 2854, 3154, 5716
Huron, Lake, in Ontario, 212, 214
Huss, John, painter, 1109
Huss, John, reformer, persecuted, 2528, 3154, 2576
Hutchinson, Mrs. Lucy, her heroism at Nottingham Castle, 3471
Huxley, found traces of a reptile in a rock, 2886
 his life, 588; portrait, 851
 what he said about fossils, 2883
 what he said of Carlyle's writings, 4104
Hwang-ho, river in China, its floods, 106
Hyacinth, different kinds, 5272
 grape, 5272
 how to grow in glasses, and picture, 1716
 how to treat, 1610
 hyacinths grown in a bowl, picture, 1816
 origin of, 5272
 picture, in colour, 3727
Hyde, Anne, wife of James II., 2382
Hyde, Edward, Earl of Clarendon, his life, 1888, 2382; portrait, 2379
Hyde Park Corner, Burton's arch, and picture, 5003, 5004
Hydra, slain by Hercules, 3314, 5163
Hydrangea, picture, 830
Hydriodic acid, 1797, 1801
Hydrobromic acid, how it is formed, 1797
Hydro-carbons, what they are, 1870

INDEX

Hydrochloric acid, a strong acid, 1801
 how it is produced, 1667, 1797
 its graphic formula, 1798
 produced in the stomach, 2344, 2698
Hydrocyanic acid: see Prussic acid
Hydrogen, can be liquefied, 4050
 contained in comets, 2499
 exists in stars, 2427, 2719
 exists in the sun, 2088
 forms acids, 1797
 gives the most heat, 3757
 much lighter than air, 3816
 one of its uses, 914
 what kind of element it is, 1193
Hydrogen gas, its specific heat, 4475
Hydrometer, tells the specific gravity of liquids, and picture, 3815, 3817
Hydrophytes, class of plants, 5031
Hydroplane, picture, 6087
Hydrides, what they are, 1800
Hydroxyl, its formula, 1800
Hyena, 50, 142; pictures, 51, 138
 how captured, 6148
Hygrometer, what it is, 3922
Hyksos, kings of Egypt, 4786
Hymn, a form of lyric poetry, 343
 writers of the hymns, 1995
Hypnotism, 5170, 5135
Hyrax, what it is, 995; picture, 996

I

I love my love, game, 237
I spy, game, 574
Iamby, a court fool, 4278
Iberian Peninsula, history and geography, 3351
 what it is, 3011
Iberians, conquered by the Romans, 3352
Ibex, goat, with picture, 380, 381
Ibis, sacred bird, 1956; picture, 1953
Ice, can be cooled and heated, 4048
 how it is procured, 3707
 ice cavern in Hungary, 2860
 is solid water, 359
 its specific gravity, 3816
 kept cold by flannel, 682
 lighter than water, 3036
 shrinks as it cools, 4229
 weight, 4339
 why it is slippery, 3092
 why it turns liquid when heated, 4825
Ice Age, effect on mountains, 3228
 how it destroyed the animals, 50
 in America, 12
 may come again, 2073
Icebergs, how they are formed, 3228
 their size, with pictures, 4228, 4229
Ice Haven, discovery by Barents, 4722
Iceland, belongs to Denmark, 3598
 Norsemen settled in, 3592
Iceland spar, 5173; with picture, 5178
ICES, how to make without a freezer, 3915
 why a cup containing ice cream gets wet outside, 3096
 why too many ices are bad, 4052
Ichneumon fly, 2990, 3256
 pictures, face 3140 and 3257
Ichthyosaurus, 48, 2884; picture, 44
Ichinos, helped to build Acropolis, 5128
Ida, little Ida's flowers, story, with pictures, 3505
Idaho, admitted, 3537
Iduna, and the golden apples, story, with picture, 3581, 3582
Ightham Moat, picture, 2457
Igneous rocks, are made by fire, 3035
Ignis fatuus, the will-o'-the-wisp, 3542
Igorrotes, origin of, pictures, 2182, 2186-87
Iguana, a lizard, with picture, 1219, 1225
Iguanodon, a lizard, 48; picture, 44
Iguazu Falls, and picture, 4499
Ikagame temple, picture, 371
Ikons, what they are, 3750
Iliad, the story of, 67, 5121
Illecillewaet Valley, picture, 6189
Illinois, admitted, 1824, 3534
Illness, what the pulse tells us, 4344
 why damp air makes us ill, 4595
 why we do not get some illnesses twice, 2454
Illusion, dancing dwarf, 5667

Illyria, a country, 475
Ilmen, lake in Russia, 3750
Imitation, influence on actions, 5135
Immigrants, begin coming to America, 3535
 into Canada, 6049
 laws for Canada, 6050
Imp, with a disappearing head, trick, with picture, 3388
Imponderabilia, things that cannot be weighed, 4048
In the Days of the Comet, extract from, 5509
Ina, king of Wessex, story, 2302
Inauguration Day, in District of Columbia, 4470
Incandescent light, came into use, 657
Incas, legends about, 4504
 their conquest by Pizarro, 4502
Incisors, the flat front teeth, 2098
Incubator, hatches eggs, 1514, 2229
Independence, holidays celebrating anniversaries of, 4467, 4470
Independence Day, celebration of, 4467; with pictures, 4471
India, a farmer and a warrior, 1701
 animals, 1545
 climate and physical features, 1515, 1546
 conquest of, 4037
 England at war with natives, 1704
 England traded with India, 1702, 4036
 finding the way by sea, 59
 French and English at war, 1094, 1704
 how it became a British possession, 1702
 how the British rule in, 1552
 its history, 1699
 its trees cut down, 3650
 our tea chiefly comes from, 88
 people and religion, 1550, 1699, 1700
 size and population, 1545
 stories told there 3,000 years ago, 5421
 towns and buildings, 1548
 why it is hotter than Alaska, 1060

Pictures

a rope bridge, 31
 flag of India, in colour, face 1640
 home life of the people, 1547
 map, 1544
 native soldiers, 1699
 old and new rulers, 1698
 the splendour of travelling in India, 1705
Indiana, admitted, 1824, 3534
Indian-bean tree: see Catalpa
Indian cattle, picture, 377
Indian hunter (the), picture of, 4847
 statue, 4846
Indian leaf butterfly, picture, 3409
Indian Mutiny, broke out, 1098, 1706
 tales of, 1913
 the noble Sikh in, 2548
Indian pipe, a flower, 3052
Indian poke, a flower, 3052
Indian race, a game, 4242
Indian ray, picture, 2449
Indian turnip, the Jack-in-the-Pulpit, 2839
India-rubber, comes from trees, 683
 how it is prepared, 3543
 where it comes from, 3542
 why it removes pencil marks, 3095

See also Rubber

Indians, American, as fur-trappers, 5152
 Blackfeet, 4578
 Botocudo Indians, primitive habits, 4503
 ceremonial dance, picture, 6134
 Crees returned to Canada, 4578
 description, 14
 exhibits concerning, 4901
 feast of, 264
 how they cooked their food, pictures, 5133
 how they treated the colonists at Roanoke island, 6132
 how to make an Indian from straw, with picture, 5102
 in Canada, 214, 218, 536, 2557
 in the Barren Grounds, 1920
 Iroquois incensed at the French, 538
 legends, 1063, 3313
 medicine men of Winnebagoes, 1829
 natives of America, 1877, 4036, 4384

- Indians**, of the Painted Desert, with pictures, 3683
 pictures, 4500; frontispiece in colour, facing 5493
 wars of: see Battles; Colonies; French and
- See also **Aztecs**; **Five Nations**; **Iroquois Indians**; **Six Nations**
- Indo-China**, belongs to France, 2400
- Indus River**, flows through the Punjab, 1546
 its size, 1545
 rises in Tibet, 3936
- Industrial Disputes Investigation Act**, or Lemieux Act, 4093
- Industries**, Public Utility, 4093
- Inertia**, what it is, 2879, 3469
- Infection**, is carried by germs, 3972
- Infernal machine**, first made, 4227
- Infusoria**, how important they are, 3677
 how they multiply, 2335
- Ingelow, Jean**: see Poetry Index
- Injury**, body's effort to repair, 5642
- Ink**, how to make for a hectograph, 1287
 how to make invisible inks, 1287
 how to remove ink-spots, 4456
 is carried by some fish, 2452
 on wood, 5666
 why it stains, 5169
 why it writes better on paper than on a slate, 1641
- Inkerman**, battle of, 3632
- Inness, George**, life and art, 4151
 picture by, 4155
- Innocent III.**, a pope, 4715, 4946, 4948
- Inn River**, 2856, 2960
- Innsbruck**, 2854; pictures, 2859, 6259, 6264
- Inquisition**, what it was, 1660, 3356
 established in the Netherlands, 3460
- Insects**, how numerous they are, 2815
 how they protect themselves, 3407
 how they talk, 5791
 how to get rid of in the garden, 3726
 in natural colours, picture, face 3140
 some foes of man, 3139
 some friends of man, 3255
 talk to each other, 1269
 that pretend to be plants, picture, 3409
 their eyes, 3260, 4215
 their homes in growths on trees, 2460
 their power of hearing, 5021
 useful to plants, 38
 what they are, 547
 why they visit flowers, 3734
- Inspiration**, is breathing in, 1637
- Instep**, how it is formed, 2546
- Instinct**, how it decides actions, 5132
 is very useful, 4233
 power of, in animals, 4549
- Instruments**, barometer made at home, 5447
 musical, made out of old bottles, 5448
 periscope, 5586
 phonograph, 5695
 telephone that a boy can make, 5528
- Intercolonial Railway**, building of, 2277
- Interest**, is necessary to thought, 1366, 5026
- Interior, U. S. Department of**, what it is, 1597
- Interlaken**, picture, 2963
- Intra-molecular**, what the term means, 1633
- Invalides, Hôtel des**, description, 5338
- Inventor**, American inventors and inventions, 2667
 how he thinks, 4942
 thinking out problems, picture, 652
- Inversely**, what is meant by varying inversely, 4320
- Inverse squares**, the law of, 2504
- Invertebrates**, animals without a backbone, 664, 2437
- Involuntary muscle**, 2626
- Iodine**, shows if starch is present, 2696
 what it is, 3093
- Ionians**, a Hellenic tribe, 5124, 5126
- Iowa**, admitted, 1836, 3535
- Iquitos**, town, 4498, 4567
- Ireland**, a present to Henry II., 594
 birds-eye view of, 5462
 description of, with pictures, 5459
 Henry VIII. tried to settle Ireland, 845
 Richard II.'s reign in, 752
- Ireland**, rose in favour of Charles I., 1025
 Ulster settlers, 1022
 union with Great Britain, 1096, 1639
- Ireton, Henry**, how Charles II. treated his body, 4640
 picture, 1896
 was a great man in the Commonwealth, 1026
- Iridium**, how it is used, 5731
- Iris**, flower, different kinds, 5272
 is part of the eye, 3434
- Irish burnet moth**, picture, in colour, face 3141
- Irish elk**, 382
- Irish flag**, the story of, 2333
- Irish Sea**, 192, 194
- Irkutsk**, has gold-smelting works, 3752
- Iron**, bridges made of cast iron, 19
- Iron**, can a piece get tired? 5486
 can be bent when heated, 3757
 gets tired, 3977
 heat travels along an iron bar, 1061
 in Canada, 5600, 5601
 iron sinks, 685
 is found in meteors, 2500
 is in the sun, 2083
 is necessary to life, 1385
 is the most valuable metal, 1292
 it can float on mercury, 3757
 its specific gravity, 3816
 loses weight when it rusts, 3235
 manufacture of, 5537
 moved by magnets, 5471
 production of in U. S., 2660, 2662
 stains cliffs brown, 3339
 Swedish iron is good for steel, 3600
 wastes slowly with fire, 4822
 where ore is found, 5538
 why an iron ship floats, with picture, 685
 why iron rusts, 1776
 why it feels colder than wood, 3382
 why it turns red when hot, 3545
 will not rust in Lake Titicaca, 4572
- Iron Age**, 1292
- Ironsides**, Cromwell's army, 1024, 1888
- Iron-wood**: see Hornbeam
- Iroquois Indians**, 17
 exhibit of, with pictures, 4906
- Irradiation**, how it affects the eye, 2879
 what it means, 3382
- Irving, Sir Henry**, Columbus sees America, an extract, 5506
 Knickerbocker History of New York, an extract, 5533
 picture, 4158
- Irving, Washington**, 1476; portrait bust of, 4844; portrait, 1475
- Isabella**, at the siege of Granada, 3356
 married Ferdinand of Aragon, 3356
 offering her jewels, picture, 2367
 of Spain, and Columbus, 56, 58
 stories of her goodness, 2367
- Isabella**, wife of Edward II., 2533
- Iselle**, Switzerland, 6204; picture, 6214
- Isinglass**, what it is made from, 202
- Island**, how it is formed, 3004
- Island No. 10**, surrendered, 2013
- Island of St. John**, French name of Prince Edward Island, 745
- Island Range**, partially submerged, 5611
- Isle of Man**: see Man, Isle of
- Ismail**, became Shah of Persia, 3380
- Isolt**, the story of her life, 3211
- Ispahan**, 3380, 3381; picture, 3377
- Issus**, Persians defeated at, 1306
 pictures, 5059
- Istria**, is a port of Austria, 2860
- Italy**, became one nation, 124, 3024
 destruction of Pompeii, 5314
 flag, with picture, in colour, 1640
 its history, 3012
 its possessions in Africa, 4262
 its progress, 3024
 its shape and position, 3011
 its towns, 3014
 map of, picture, 3013
 physical features, 3012
 southern Italy added to the German states, 2527
 story of Italy under the Austrians, 1654
 the seat of the new learning, 3156
 was invaded by Napoleon, 2274

INDEX

Italy, why is its sky bluer than ours? 5384
won by the Romans, 5262, 5266
Ithaca, the kingdom of Ulysses, 70
Ivan III., of Russia, married a Greek, 1640
was a powerful ruler, 3626
Ivan IV., of Russia, 3626
Ivanhoe, story of the novel, with picture, 1645, 1647
Ivory, from elephant's tusks, 274, 2098
is got from prehistoric animals, 3752
Ivory Castle, the princess of, story, 2092
Ivory Maiden, who came to life, story, 962
Ivy, has flat flowers, 3736
pictures, 734, 1453
why it clings to walls, 159
will grow in water, 2564
Ivy-leaved geranium, 830; picture, 5275
See also **Ground-ivy**; **Poison-ivy**
Iwakuni Bridge, with picture, 31

J

Jacana, a bird, 1953
Jack, the luck of simple Jack, story, 2740
Jack, a coat worn by sailors, 2333
Jackal, picture, 134
stories about, 5349, 5350
what it is like, 142
Jack and the Beanstalk, story, with pictures, 3159
Jack-by-the-Hedge: see **Hedge-garlic**
Jack Cade, Rebellion, leader of, 5524
Jackdaw, and pigeons, fable, with picture, 3852
pictures, 1744, 1847
the vain jackdaw, fable, with picture, 877
Jack-in-the-Pulpit, description, 2839
Jack's House, how the air purifies the blood, 6251
Jack's fresh air supply, 6178
Jack's wireless telephone, 6291
the great corridor, 5910
the great pump in, picture, 6090
the house that Jack has, 5761
the kitchen, 6015
ventilation of, picture, 6253
Jackson, A., administration, 3534
as president, 1828
defence of New Orleans, 1400
life, 792
picture, 787, 3532
portrait bust, pictured, 4843
suppressed Creek uprising, 1399
Jackson, F. S., his journey to Franz Josef Land, 4724, 4726; picture, 4725
Jackson, General, his clever horse, 272
Jackson, Helen Hunt, life, 2047
See also **Poetry Index**
Jackson, T. J., at Bull Run, 2016
in the Shenandoah, 2014
killed, 2016
nickname "Stonewall" given to, 2013
picture, 2011
saved Richmond, 2016
Jackson, the capital of Mississippi, picture, 6215
Jackson Monument, by Clark Mills, 4844
Jack the Giant Killer, story, with pictures, 1794
Jacob Faithful, the story of the book, with picture, 2197
Jacobin, pigeon, has a hood, 2215
Jacobins, in France, 4060
Jacobite Rebellion, Second, 1496
Jacob's Ladder, mysterious, 5667
Jade stone, comes from Turkestan, 3934
Jaguar, stories about, 5730; with picture, 136, 140
Jainism, what it teaches, 2996
Jain temple, at Calcutta, picture, 2231
at Ahmedabad, picture, 2997
Jamaica, is a British island, 1877
Columbus' stay on, 4464
taken by the English, 1027
Jamaican humming-bird, 1740
Jamel, the Saxon, built a church, 1321
James I., became king of Scotland, 848, 2535, 5948; pictures, 2710, 5949
helped the German Protestants, 2523
his father and mother, 846

James I., his reign, 1021
married Anne of Denmark, 3596
was James VI. of Scotland, 3088
James II., king of England 1024, 5951
escaping after the battle of the Boyne, picture, 1027
ruled badly, 2535; was deposed, 1029, 2708
was helped by Louis XIV., 2070
James III., of England, 1029
James I., of Scotland, his reign, 3086
prisoner, 754
how he was slain by traitors, 240
James II., of Scotland, his reign, 3086
James III., of Scotland, presented to the nobles, picture, 3083
James IV., of Scotland, his reign, 3086
marriage, 842
was killed at Flodden, 846
James V., of Scotland, 846, 3086
James, Professor, on sight and hearing, 4822
Jamestown, colony of, 516
its ruins, 5983

See also Virginia

Jam-jar, how to draw, picture, 973
Jane Seymour, mother of Edward VI., 845, 2534
Janissaries, are Turkish troops, 3156
murdered the Servians, 3222
mutinied, 3158
January, what name means, 4515
Janus, god, with picture, 4515
Japan, at war, with China, 368
description of, with pictures, 5557
dress and houses, 372
dwarf trees grown in, 2079
earthquakes in, 3232
in Hawaii, 2132
its festivals, 364, 374
its flowers and trees, 368
its history and geography, 363
its industries, 372
its people, 365
its towns, 370
looking-glass discovery, story, with picture, 5161
pictures, scenes, 5557-5565
Shinto temple, 371
the children of Japan, 254, 374
the sacred mountain, 370
the soldiers' food, 2700
treaty with, 3536
war with Russia: see **Russo-Japanese war**
what Marco Polo said of it, 366

Pictures of Japan

dwarf trees, 2079
emperor of Japan, 363
flag of Japan, in colour, 1640
map of Japan and China, 365
scenes of life, 367, 369, 371, 373
Japanese anemones, 5270
Japanese chrysanthemums, 573
Japanese lily, 5271
Japanese midgets, are small fowls, 1513
Japan Sea, 363, 3752
Jar, story concerning a, 5344
Jarnac, where a battle was fought, 1654
Jason, and Golden Fleece, 185; picture, 185
Java, the, and the Constitution, 1398, 2902
Java sparrow, 1746; picture, 1742
Jay, bird, and picture, 2209, 2211
varieties in Canada, 3489
Jeanne, the brave little mother, story, 321
Jeanne d'Albret, queen of Navarre, 1654
Jefferson, Thomas, administration, 3533
and Declaration of Independence, 4468
as president, 1396
disturbed by Jerome Bonaparte's visit, 4908
enemy of slavery, 2008
life, 790
portraits, 787, 987, 1391, 1395, 3532
Jehan Gir, a king of India, 1702
Jehu, his tribute to Shalmaneser II., 4978
Jellyfish, a low form of life, 1410, 2341
picture, 1414, 1417
Jena, battle of, 3631
where telescopes are made, 2752
Jenghiz Khan, his conquests, 3934
ruled over a great empire, 110
Jenner, Edward, his life, 4200
introduced vaccination, 2459, 2799

Jenner, Edward, picture, 4195
poems: see Poetry Index
Jenny Wren, picture, 2055
Jerboa, animal, 670; picture, 671
Jerfalcon, a well-known falcon, 1846
Jerome, St., his life, 3982
Jerusalem, conquered by Titus, 531, 6222
part of Cross taken by Persians, 3152
pictures, 3981, 3989
taken by Nebuchadnezzar, 4983, 6220
taken by the Seljouk Turks, 3154
the siege by the Crusaders, 1588
was taken by the Saracens, 1589, 3152
won back from Syria, 117
Jervis, John: see St. Vincent, Earl of
Jesuits, how they work, 3990
preached Christianity in China, 112
Jesus Christ, actual birthday of, 5524
birthplace unknown, 5383
how His teaching spread, 3874, 6220
legends of, 1677
piece of Cross taken by Persians, 3152
was born in the time of Augustus, 528
what Christians believe, 1552

Pictures of Jesus Christ

Jesus and His mother, by Raphael, 761
Jesus and the tribute money, by Titian, 761
Jewel-weed, picture, 4938
Jewett, Sarah Orne, life, 2048
Jews, carried into captivity, 4978, 4983
rebelled against Syria, 117
the people, 6217
were slaves of the state, 2910
Jiddah, the port of Mecca, 3876
Jillofer, name of ten-week stocks, 5276
Jimmu, emperor of Japan, 364, 370
Jimson-weed: see Thorn-apple
Jingling, game, 5000
Jingo, Japanese empress, 364, 370
Jinriksha, and picture, 67
Joan, countess of Brittany, and picture, 2478
Joan of Arc, incited French against English, 754
pictures, 119, 121, 126
saved France, 120, 2063
statue on the Seine, 2399
Joanna, of Spain, her son became Charles I. of Spain, 3356
married Philip of Austria, 3460
Joao, king of Portugal, 3168
Joceline, and the little black man, story, and picture, 4923
Joe-Pye-weed, description, 5190
picture, 5187
Jogues, Father, Jesuit missionary, 880
Johannesburg, picture, 1767
Johansen, Lieutenant, his expedition with Nansen, 4726
John, king of England, 2704, 5943
did not sign Magna Carta, 5524
plotted against his brother, 2533
signed Magna Carta, 598
signing Magna Carta, picture, 597
John III., king of Poland, defeated the Turks, 2523, 3158
rescued Vienna, 2850
John XXIII., pope, 4948
John, don of Austria, 3157
John, of Gaunt, friend of Chaucer, 3328
John Brown's Body, history of song, 2956
John Brown's Raid, 2010, 3536
John Bull, his picture, 2331
how the nickname arose, 2330
John Chinaman, made of pea-nuts, with pictures, 450
John Damascene, St., 1995
John Halifax, Gentleman, the story of the book, 3923; with pictures, 3927
Johnson, Andrew, as president, 2024
impeached, 2024
Johnson, Eastman, life and art, 4149
Johnson, E. Pauline: see Poetry Index
Johnson, Samuel, his life, 4678
how he sold Goldsmith's manuscript for him, 1732
pictures, 4099, 4675, 4681
reading Vicar of Wakefield, picture, 1731
remarks on American rights, 982
what he said of Burke, 4102

Johnson, Samuel, what he said of Goldsmith, 1732
what he said of Rousseau, 4097
Johnson, Sir William, influence with Indians, 880
Johnston, Albert Sidney, career and death, 2013
Johnston, Joseph E., army of, 2014
in command Confederate army, 2018, 2022
picture, 2011
retreat of, 2020
surrenders, 2022
Johnston, Mary, life, 2049
Johnston, Sir Harry, brought a chimpanzee to England, 602
tried to find an okapi, 1000
Joints, how fished joints are made, 1511
how the joints of the head and limbs are formed, with picture, 2543
making simple joints in wood, with pictures, 1345
more wood joints, with picture, 1510
Joliet, Louis, exploration of Illinois, etc., 264
visited site of Chicago, 6513
Jolly miller, the, how to play it, 3614
Jones, Inigo, influenced by Palladio, 1254
Jones, Jacob, commander of the Wasp, 2902
Jones, John Paul, battles of, 2898
given commission in American Navy, 2898
gives advice to the Continental Marine Commission, 2897
irregular navy of, 990
picture, 2899
Jones, Mary, how she got the Bible, 2548
Jonquil, flower, 5272
Jonson, Ben, a great poet, 2151
poems: see Poetry Index
Jordan River, in Palestine, 3874
Jornillo, a remarkable volcano, 4386
Joseph, in Egypt, 4786
Joseph of Arimathea, and the Holy Grail, 871
Joseph of the Studium, St., wrote hymns, 1995, 1996
Josephine, Napoleon's wife, 2276
Jostedal glacier, picture, 3599
Jouffroy, Marquis de, said to have made first steamboat, 2463
Joule, James Prescott, what he proved about heat, 4366
Jourdan, Jean Baptiste, Napoleon's marshal, 4362
Journal of the Plague Year, extract from, 5596
Jove: see Jupiter
Joy, George William, his pictures, Lear and Cordelia, 633
Joan of Arc resting after a fight, 119
Nelson about to join his first ship, 4357
Wellington at a French school, face 4355
Joyce, Cornet, was sent to Holmby House, 1839
Juarez, B. P., president of Mexico, 4390
Judas Maccabeus, delivered Jews, 117
Judge, who imprisoned a prince, story, and picture, 4830
Juggernaut, a god of the Hindoos, 1550
Jugglers, the cleverest are Indians, 1378
Julian, the Apostate, addressing Christians, picture, 3151
conquered by Sapor II., 5066
tried to restore pagan worship, 3151
Julier Pass, had a Roman road, 2962
Julius II., pope, built St. Peter's, 4948
invited Raphael to Rome, 4952
tomb made by Michael Angelo, 4952
Julius Caesar, Antony's speech, picture, 2917
came to Britain, 195, 196
carried in triumph, picture, 4518
condemning Vercingetorix, picture, 418
his book on Gallic War, 5266
his conquests, 5265
gave July its name, 4519
love for Cleopatra, 5705
most famous of the Romans, 420
started written history of Gauls, 2063
the death of, picture, 418
July, how it got its name, 4519
Jumbo, famous elephant, 274
Jumping beans, what they are, 2459
Jumping frog, made from a wishbone, 5896
Junco, in Canada, 3493
June, how it got its name, 4518

INDEX

Jungfrau, The, a peak in the Alps, 2960
Junks, are Chinese boats, 115
Juno, goddess, changed Calisto into a bear, 3314
 claimed golden apple, 1683
 picture, 4518
 temple of, 554
 the wife of Jupiter, 4518
Jupiter, god, and the ass, fable, 3310
 drove out Discord, 1683
 changed Calisto into constellation, 3314
 gave the frogs a king, 462
Jupiter, planet, Galileo discovered Jupiter's moons, 147
 gets in the way of comets, 3095
 has tides, 2280
 how it got its name, 2234
 how its surface moves, 2084
 is small compared with the sun, 1944
 is still hot, 1367
 is too hot to bear life, 3437
 moons, or satellites, 150, 3032
 the planet, 147
 what is known about it, 2428
Jura Mountains, 2392, 2960
Justinian, Emperor, 1812, 2911, 3152
Jutes, a people, came to England, 427
Jutland, is a peninsula, 3592

K

Kaaba, temple, 3876; picture, 3001
Kabul, Lord Roberts' march, 3938
 the British retreat from, 3938
 picture, 3935
Kaffirs, compound, picture, 1764
 employed in gold mines, 5302
 pictures, 1764, 1767
Kaiser-Wilhelm Canal: see Kiel Canal
Kaka parrot, picture, 1743
Kakapo, bird, 1430; picture, 1431
Kalakaua, king of Hawaii, 2181
Kaleidoscope, that a boy can make, 339, 6012
Kalevala, songs of the land of heroes, 5938
Kalmia: see Laurel, mountain
Kalmucks, tribe, and picture, 3939
Kamchatka, explored by Behring, 3630
Kamera, the proud king, story, 1525
Kandahar, Lord Roberts' march, 3938
Kangaroo, different kinds, 862
 its life-story, 860
 lives in Australia, 50, 1364
 pictures, 51, 863
 protection of young, 5479
Kangaroo rat, is a small kangaroo, 862
Kansas, admitted, 1836, 3536
 fighting in, 3536
 organised as territory, 2009, 3536
Kansas-Nebraska bill, introduced by Stephen A. Douglas, 2009
Kant, Immanuel, his life and teaching, 4622
 pictures, 4623, 4625
 theory on nebulae, 2862
Kaolin, a white clay, 372, 2396
Kapiolani, heroine of Southern Seas, 2491
Kapteyn, Professor, his theory of the movement of stars, 2718, 4438
Karachi, is a port of India, 1548
Karakorum Mountains, 3932
Karlsefni, Thorfinn, American colony of, 257
Karnak, temples, ruins, 4787, 5823; pictures, 5007
Kashgar, where it is, 3934
Kate Barlass, story, with picture, 240
Kattegat, passage between Sweden and Denmark, 3600
Kaukeli Mountains, in Norway, 3599
 tourists snowballing, picture, 3599
Kauri-tree, gives a sort of gum, 1462
Kay, Sir, one of Arthur's knights, 867, 1680
Kazan Cathedral, in St. Petersburg, 3748
Kazan Pass, Hungary, 5718
Kea, a bird that eats sheep, 1747
Kearney, Philip, at Santa Fé, 1832
Kearsarge, the, war-vessel, 2015
Keats, John, life, 3910; picture, 3907
 poems: see Poetry Index
Kebble, John, picture, 1999
 poems: see Poetry Index
 wrote Sun of My Soul, 2000

Keeler, Prof. J. E., has photographed a nebula, 2865
Keewatin, organised into a district, 1247
Keller, Helen, sketch of, 2050
Kellogg, Elijah, The Gladiator's Appeal, 5505
Kells, Book of, in Dublin, 5461
Kelts, conquered by the Romans, 3352
 in the British Isles, 469
 invaded Europe, 2851
 lived in Switzerland, 2962
 lived in the Netherlands, 3457
Kelvin, William Thompson, Lord, and conservation of energy, 4476
 his powers of invention, 4943
 on dissipation of energy, 4368
 on sensible and latent heat, 4474
 picture, 2113
 used wire to sound the sea, 5167
 was an electrician, 2121
 what he did for telegraphy, 4317
 what he said about seeds, 1778
 what he said a drop of water is, 1553
 what he supposed matter was, 3467
Kempfenfelt, Richard, drowned, 472, 4434
Kempis, Thomas à, his life, 3987
 picture, 3981
Ken, William, bishop, picture, 1999
 wrote hymns, 2000
Kenia, Mt., is in Africa, 4254
Kenilworth, the story of the novel, 1494
Kennel, making one, and pictures, 5105
Kenneth, king of Scotland, 434, 3079
Kent, was an old kingdom, 428
Kent cob, nut, 1965; picture, 1969
Kentish glory moth, picture, face 2982
Kentish hill, where the ancient Britons fought the Romans, picture, 195
Kentucky, admitted, 1820, 3533
 as slave state, 2010
 remains in Union, 2012
 settlement, 1820
Kentucky blind fish, with picture, 2683
Kepler, John, a story about, 1182
 believed in astrology, 1940
 discovered movements of planets, 2426
 his law explained by picture, 3547
 his laws of planetary motion, 3547
 picture, 1655
 saw a comet, 2497
 the story of his life, 1658
Kern Knotts Crack, picture, 5017
Kerosene, how we get it, with pictures, 4131
Kessinger, Jim, subject of yellow fever experiment, 3201
Kestrel hawk, 1846; pictures, 1744, 1847
Ketch, ship, 3914; picture, 3913
Kethe, Wm., hymn-writer, 1995
Kettle, a boiling kettle, picture, 4365
 the song of the, 5508
 the use of a marble in, 2878
 why it does not get red hot, 3546
 why it sings, 911
Key, Francis Scott, author of the Star Spangled Banner, 1399, 2955, 4465, 4467
 See also Poetry Index
Keystone, holds an arch together, 620
Khaibar Pass, its length, 3938
 north-west of India, 1544
Khaki, why our soldiers wear it, 3407
Khartoum, Gordon's defence and Kitchener's victory, 4260
Khedive, is the ruler of Egypt, 4258
Kherson, near mouth of Dnieper, 3631
Kidd, Captain, a pirate, 525
Kidneys, purify the blood, 1583, 1584
Kiel, headquarters of German navy, 2750
Kiel Canal, its position, 2750
Kier, Samuel M., secured carbon oil, 4131
Kiev, an old town, 3750
 in Russia, 3624
 picture, 3744
 was desolated by fire, 3624
 was held by the Lithuanians, 3626
Kilauea, a terrible volcano, 2491
 largest active volcano, 2181
Killmanjaro, Mount, in Africa, 4254
Killarney, description of, 5466
 fairy fountain of, legend, 3166
 lakes of, with pictures, 5465
Kimberley, diamonds found, 1770

- Kimono**, is worn in Japan, 372
Kinchinjunga, Mount, in the Himalayas, with picture, 2502
Kinematograph, a moving picture, 3467
Kinemacolor, what it is, 5090
Kinetic energy, energy of motion, 3552
Kinetic theory of gases, what it is, 3467
Kinetoscope, how to make a toy kinetoscope, with pictures, 441
 invented by Edison, 5090
King, Grace, sketch of work, 2050
King, Mrs. Harriet: see Poetry Index
King, boy who became a, story, 5075
 cruelty in olden days, 5022
 how the bad news reached the king, story, 4273
 king's daughter in the mountain, story, with picture, 1902
 king's guard, puzzle, and picture, 4997, 5114
 king's watchers, story, and picture, 4935
 of the castle, a game, 5527
 of the golden river, story, and pictures in colour, 1433, 1526
 the king, the nobleman, and the peasant, story, 3647, 4008
 the king's guest, a story, 5851
 the two kings, a story, 5654
 who came to Cashmere, story, 2745
 who could not sleep, a story, 5347
 who loved the poor, story, 4717
 why a king has an orb and sceptre, 5650
 with the golden touch, story, 556
Kingbird, in Canada, 3490
Kingsfisher, is of many species, 1747
 belted in Canada, 3489
 nest of, picture, 5786
 pictures, 51, 1741, 1744
King George's War, in colonies, 881
King Henry V., extract from the play, 5360
King Lear, allusion to Child Ronald, 5081
 story of the play, and picture, 633
Kinglets, in Canada, 3496
Kings, a thousand years of, 5941
King's College, Cambridge, founded by Henry VI., 756
King's three questions, 6080
Kingsley, Charles, picture, 2307
 poems: see Poetry Index
 the story of his life, 2315
 wrote *The Water Babies*, 1472, 3801
 wrote *Westward Ho*, 3661
Kingsley, Henry, was a novelist, 2316
King's Mountain, battle of, 992, 1822
Kingsport, Can., picture, 5603
Kingston, Ont., a Canadian town, 539, 5425, 6183
 and Royal Military College, picture, 2245
 first capital of Canada, 1240
Kingstown, Ireland, port of Dublin, 5460
King vulture, bird, 1844; picture, 1841
Kinney, Coates: see Poetry Index
Kioto, was an old capital of Japan, 372
Kipling, Rudyard, on Fuji-yama, 370
 poems: see Poetry Index
Kirghiz, a wandering tribe, 3932
Kirke, Sir David, commander of English fleet, 539
Kitchen of Jack's house, 6015
Kitchener, Lord, victories in Egypt, 4260
Kite, bird, 1844; picture, 1845
 sick kite, fable, with picture, 5205
Kites, Franklin experimented with a kite, 2116
 how to make kites, with pictures, 1506
 used in building a bridge, 20
 what makes them fly, 917
 why kites keep still at great height, 5792
 why kite keeps up in the air, a picture, 5688
Kittens, picture, 505
Kittiwake gull, 1628; picture, 1629
Klaprill family, restored the Ottoman power, 3158
Kiushiu, important in Japan's history, 370
 southern island of Japan, 366
Kleber, General, campaign in Egypt, 4258
Klondyke, gold in the, 2178
 in Canada, 216, 220
Knaresborough, the brave boy of Knaresborough, tale, 1109
Knee-cap, how it is formed, 2546
Knee-joint, most wonderful joint, 2546
Knevett, Sir Thomas, captured Guy Fawkes, 1792
Knife, mystery of the suspended, 5658
Knight, and the ugly old woman, Canterbury Tale, 442
 and wonderful stone, story, 2745
 why knights wore devices, 1639
Knights of St. John, Order of, did much for Malta, 1875
 was founded, 1589
Knight's tale, in Canterbury Tales, 441
Knights Templars, Order of, founded, 1589
Knight's vigil, picture, 1823
Knight Templar, a rock on Lundy Island, with picture, 1058
Knitting, frames set up in Leicester, 1028
 how to knit, with pictures, 4669
Knives, how they are made, picture, 4736
 how to clean knives, 4456
 how they came into use, 4735
 knife-edge magnified, picture, 2324
Knot, how the sailor ties his knots, 235
Knot-stitching, with picture, 2351
Knowledge, how it dies out, 2802
 how it influences our deeds, 5131
Knox, Henry, portrait, 1391
Knox, John, opposed Mary Queen of Scots, 3088
Knudstrop, belonged to Denmark, 1657
Koala, is a marsupial, 862
Kobe, has become a large city, 372
Koch, Professor Robert, and sleeping sickness, 3145
 discovered the consumption microbe, 907
 his work in medicine, 4204
 in his laboratory, picture, 4203
Koenig's flames, picture, 4913
Konig, Frederick, printer, 3574
Koppernik, Nicolas: see Copernicus
Koran, description of, 5889
 dictated by Mohammed, 5524
 how it was made, 5098
 is the Bible of the Mohammedans, 3002
Korea, flag of, picture in colour, 1640
 its history, 363
Koreans, pictures, 374
 settled in Japan, 364
Kosciuszko, picture, 981
Kossovo, battle of, won by the Turks, 3154
 province of Turkey, 3224
Kossuth, Louis, buries Hungarian crown, 5714, 5718
 fought for Hungary, 124
 was exiled, 2856
Kramer, Gerhard, gave us Mercator's projection, 1751
Kremlin, in Moscow, 3632, 3748
Kronstadt, has a great arsenal, 3746
 named by Peter the Great, 3630
Kruger, Paul, how he treated the British, 1770
Krupp, Messrs., factory, 2752
 guns, 5866
Krypton, is an element in argon, 1295
Kublai Khan, seated in a canopy, picture, 55
 the king under whom Marco Polo served, 54
 was a great ruler, 112
Kubn-ed-Din, a slave who ruled, 2912
Ku Klux Klan, a secret society, 2024
Kurile Islands, near Kamchatka, 363
Kurland, was added to Russia, 3631
Ewen Lun Mountains, 3931

L

- Laager**, what it is, 1769
Labat, who saved his own son, 1734
Labour, division of labour, 5282
 Unions in Canada, 4091
Labour Day, its observance, 4470
Labrador, discovery of, 258, 535
 peninsula of, 1915
Laburnum-tree, with picture, 3654
Lace, how to make a braid lace collar, with pictures, 5352
 made in Belgium, 3464
Lace-wing fly, pictures, face 3140 in colour, 3259
Lachish, taken by the Assyrians, 4978
La Clementina, houses, picture, 4575
Lacoste, Mrs.: see Poetry Index
Lacquer, how to lacquer, 2257
Lact albumin, what it is, 4547
Lacteals, carry fat in our bodies, 2347
Lactic acid, the acid of sour milk, 2100, 2795

INDEX

- Ladies-tresses**, description, 5036
picture, 5037
- Ladoga, Lake**, largest lake in Europe, 3623
- Ladybird**, 3258; pictures, 2322, 3255, 3257
- Lady's eardrop**, name of fuchsia, 5277
- Lady's slipper**, varieties of, 3049
- Lady's smock**, description, 4614
flower, picture, 4608
- Lannec, René**, invented stethoscope, 4197
- La Farge, John**, life and art, 4150
visits the United States, 4150
- Lafayette, Marie Joseph Paul, Marquis de**,
commanded the National Guard, 2270
equestrian statue of, 4343, 5333
picture, 981
helped to govern France, 4054, 4056
- La Force**, a prison in Paris, 330
- La Fornarina** and Raphael, picture, 4947
- La Guaira**, port of Caracas, 4576
- Lahoris**, tutor of Victor Hugo, 6156
- Lake Champlain**, battle of, 538, 2902
discovered, 538
- Lake-dwellers**, who they were, 2962
- Lake Erie**, battle of, 746, 4279
- Lake of the Four Cantons**, 2964
- Lake Peninsula**, in Canada, 212
- Lake Superior**, 6186
- La Mancha**, district in Spain, 3358
- Lamas**, Tibetan priests, 3940
- Lamb, Charles and Mary**, pictures, 4675, 4685
poems: see Poetry Index
their lives, 4683
- Lammergeller**, vulture, 1843; picture, 1841
- Lamp**, effect of chimney, 5250
electric, 657, 4449
gas, 653
- Lamprina**, golden, picture in colour, face 3140
- Lancashire**, cotton manufacture, 2323
- Lancaster**, a Roman name, 196
- Lancaster Castle**, picture, 5836
- Lancaster, House of**, 756
- Lancelot**, kind of fish, 3677
- Lancelot, Sir**, brought Guinevere to Arthur, 870
Elaine and Lancelot, 1185
fought with King Arthur, 3311
picture, 869
- Land**, dry land becomes sea, 404
how continents sank below oceans, 3004
how it tapers off to the south, 3006
two-sevenths of the earth is land, 3004
- Land crabs**, pictures, 2583
- Lander, Richard**, went to Africa, 282
- Landes**, marshes near Bordeaux, 2400
- Land of a Thousand Lakes**, Finland, 3623
- Land of the Morning Calm**, Korea, 363
- Land of the Red Daisies**, the, story, with pictures, 708
- Land of the Rising Sun**, Japan, 364
- Landor, Walter Savage**: see Poetry Index
- Landrall**, bird, 1953; egg, picture, 1744
- Landseer, Sir Edwin**, his picture, A Distinguished Member of the Humane Society, 498
his picture, Wild Cattle at Chillingham, 385
made the lions of the Nelson Column, 1166, 5004
- Land's End**, little pixies of, story, 1796
- Lane**, walk in an English lane, with pictures, 3885
- Lane, Ralph**, colonist sent over by Raleigh, 6131
- Lanfranc**, archbishop of Canterbury, 2702, 4709
- Langside**, battle of, 3088
- Languages**, use of one language only, 4439
what makes a language beautiful, 4077
why there are so many, 1268
why we have different words for the same thing, 3239
- Lanner**, a falcon, 1846
- Lansdowne, Marquis of**, governor-general, 1248
- Lantern fly**, picture in colour, face 3140
- Laocon**, 5812; picture, 4166
- Lao-tze**, his life and teaching, 2998
picture, 2995
- La Paz**, Indian woman with child, picture, 4503
largest town of Bolivia, 4572
- Laplace, Pierre**, invented the calorimeter, 4474
theory about nebulae, 2862
- Lapo**, the teacher of Arnolfo, 2780
- Lappet moth**, how it protects itself, 3415
- Lapps**, at home, picture, 4727
use reindeer, 277, 3601
- Lapps**, were driven north by the Teutons, 3592
- Lapwing's egg**, picture, 1744
- Larboard**, what it means, 4565
- Larch**, picture, 3656
what kind of tree it is, 3656
- Largs**, battle of, 3082
- Lark**, egg, picture, 1744
horned, 3490
its life-story, 2061
nests of, 5779
picture, 2065
the lark and her young ones, fable, with picture, 2378
- Larkspur**, different kinds, 5270
its family, 4110
when to sow, 719
- Lars Porsena**, king of Etruria, 1403
- Larynx**, contains the vocal chords, 2455
how it is made and works, 1635, 3956
pictures, 1634, 1635, 3953
- La Salle, Robert Cavalier**, explores the Mississippi, 264, 380; portrait, 261
stopped on site of Chicago, 5513
- Lascars**, name given to Malays, 1880
- Last Judgment**, pictures, 4951, 4953
- Last of the Mohicans**, story of the book, 177
- Last Sigh of the Moor**, a rock, 3355
- Lasting** of shoes, 3097, 3098
- Latent**, meaning of the word, 4474
- Lateran**, pope's residence in Rome, 4946
- Lathe**, how to build, with pictures, 4886
- Latham, Hubert**, aviator, 6082, 6086
- Latham House**, defence of, 4718
- Latimer, Hugh**, bishop, died for his faith, 5068
picture, 5070
- Latin**, why plants have Latin names, 4235
why we learn Latin, 3239
- Latin Kingdom**: see Byzantine Empire
- Latins**, fought against the Romans, 2631
settled in Italy, 5259
- Latins**, king of Italy, 72
- Latitude**, marked by lines around the globe, 1750
- La Tribune**, how the crew was saved, 3884
- Laud, William**, pictures, 1895, 1896
put to death, 1893
- Laudnum Bunches**, how to dance it, with picture, 3279
- Laughing Cavalier**, picture by Hals, 4591
- Laughing gas**, what it is, 938, 1196, 1666
- Laughing jackass**, kind of kingfisher, 1747
nest of, pictures, 1743, 5781
- Laughter**, is good for us, 4746
why people laugh, 424, 4745
- Laurel**, may be cut in August, 1350
mountain, 4488; with picture, 4486
- Laurier, Sir Wilfrid**, as premier, 1248
life and work, 4300, 5872; with picture, 4301
- Lauterbrunnen**, valley of, 5673
- Lava**, comes out of volcanoes, 311
is melted rock, 3229
- Laval University**, 5870
- Lavender**, when to pick, 1509
- Lavender bottle**, how to make it, with picture, 1925
- La Vengeance**, and the Constellation, 2900
- Lavinia**, promised to Aeneas, 72
- Lavoisier, Antoine**, invented the calorimeter, 4474
showed that diamonds were made of carbon, 1289
- Law Courts**, London, picture, 1159
- Lawn tennis**, how to play the game, 4347
pictures, 4346, 4347, 4348
- Lawrence**, of Bristol, sent a steamboat to the Thames, 2472
- Lawrence, James**, commander of the Chesapeake, 1399, 2902
commander of the Hornet, 2902
- Lawrence, St.**, Escorial dedicated to, 5498
- Lawrence**, the, a brig, 4279
- Lawson**, crossed Blue Mountains, 355
- Lawson, John**, Indian captive, 17
- Lawyer**, and the oyster, story, 4938
and the pears, fable, with picture, 2849
why one in England wears a wig and gown, 5853
- Lawyer's tale**, in Canterbury Tales, 439
- Laxey**, waterwheel at, picture, 2108

INDEX

- Layard, Sir Henry**, discoveries in Assyria, 2319, 4973, 4977, 4978
- Laying**, how to layer plants, 3826; picture, 1279
- Lazear, Dr. Jesse W.**, died while experimenting with yellow fever, 3201
- Lazzaroni**, district in Naples, picture, 3022
- Lead**, an element, 839
- how lead in the earth was formed, 1571
- in Canada, 5599
- in the United States, 2660
- its specific gravity, 3816
- result of changes in uranium, 4234
- why it is cheaper than diamonds, 4746
- Lead pencils**, how they are made, pictures, 3403
- made of carbon, 839, 1289, 4746
- Leaf**, drawing and painting leaves, with pictures, 1453
- leaves die at the end of summer, 425
- leaves of water and land plants, 4961
- making leaf pictures on wood, with picture, 5101
- Maple Leaf Forever, 2466
- the lungs of a leaf, picture, 228
- trees harmed by plucking leaves, 3093
- water cannot enter, 4338
- what a green leaf can do, 286
- what happens when a leaf falls, 425
- why a leaf is flat and thin, 230
- why it changes colour in autumn, 1133
- why leaves have different shapes, 4600
- why leaves shake, 4600
- Leaf butterfly**, 3414
- Leaf-cutting bee**, nest and grub, picture, 2823
- Leaf insect**, its life story, 3410
- pictures, face 3140 in colour, 3411
- Leaf-mould**, how to prepare it, 4462
- Leap-frog**, game, 724
- Leap year**, why we have leap year, 80
- Leaping-pole**, how to use it, 3614
- Lear, Edward**, rhymes: see Poetry Index
- Learning by heart**, why it is useful, 4795
- Leather**, animals the skins of which make best leather, 380, 6168
- coins made by Romans, 6167
- how to make leather sucker, 936
- its many uses, 6168
- made from the hides of cattle, 376
- processes of curing and manufacturing, pictures, 6169
- process used by the Egyptians, 6167
- production in United States, 2664
- Leaven**, how it acts in dough, 1143
- Lebanon**, mountains in Syria, 3874
- Leben**, sour milk drunk by the Arabs, 6034
- Leclanché electric battery**, with picture, 1075
- Lectern**, why made like an eagle, 5650
- Lee, Charles**, captured, 986
- not useful, 984
- Lee, Richard**, and Declaration of Independence, 4467
- Lee, Richard Henry**, motion in Congress, 986
- Lee, Robert E.**, as college president, 2024
- birthday celebrated, 4466
- his home near Washington, picture, 5987
- in command Confederate Army, 2016
- invades Union territory, 2016
- picture, 2011
- sketch of life, 4466
- surrenders, 2022, 3536
- Leeks**, should be sown in March, 2971
- Leuwenhoek, Anton van**, studied microscopes, 2319
- Leeves, William**, composer, 3742
- Leeward**, what it means, 4565
- Leg**, bones, picture, 2543
- how it is formed, 2546
- trick, picture, 6068
- why artificial legs are called cork legs, 5524
- Legaré, James**: see Poetry Index
- Legend of Montrose**, Scott's novel, 1495
- Legends**, what a legend is, 3166
- See also Stories
- Leghorn**, the port of Florence, 3024
- Leguminous plants**, 3340
- Le Havre**, its trade, 2396, 2399
- port of Northern France, 2394
- Leibnitz, Gottfried**, life, and portrait, 851
- Leicester, Robert Dudley, Earl of**, hero of Kenilworth, 1494
- how he treated Amy Robsart, 3854
- Leif the Lucky**, an explorer, 3594
- Leighton, Lord**, a sculptor, 4162
- his picture, in colour, Phoenicians trading with the early Britons, face 191
- Leipzig**, battle of, 2576, 4364
- famous for books, 2752
- Lemieux Act**: see Industrial Disputes Investigation Act
- Lemming**, a rodent, 769; picture, 771
- Lemons**, how they grow, picture, 643
- how to make electricity with a lemon, with picture, 98
- where they grow, 642
- Lemur**, animal, 608; pictures, 51, 607
- Lena River**, its length, 3752
- L'Enfant, Peter Charles**, laid out Washington City, 1714
- Lens**, different kinds of lenses, 5639
- Leodegran, King**, father of Guinevere, 870
- Leofric**, Lord of Coventry, 5386
- Leon**, a province of Spain, 3353
- Leonard, St.**, legend of, 2648
- Leonardo da Vinci**, a great painter, 757
- his picture, Mona Lisa, 4589
- his work as a painter, 4586
- one of his sayings, 1964
- portrait, 759
- rivalry with Michael Angelo, 4950
- Leoncavallo, Ruggerio**, composer, 3252
- Leonidas**, drove back the Persians, 1301
- killed at Thermopylae, 5062
- Leonids**, a shoal of meteorites, 1864
- Leopard**, how captured, 6148
- how it attacks its prey, 5728
- picture, 136
- stories about, 5728, 5730
- tree climber, 5728
- what kind of animal it is, 139
- Leopardi, Alessandro**, his work on the Colleon statue, 1254, 4161
- Leopold**, duke of Austria, 1590
- Leopold**, king of Belgium, 3464
- Lepanto**, battle of, 3158, 3358; picture, 3157
- Lepidoptera**, butterflies and moths, 2984
- Leprosy**, leper colony of Molokai, 2182
- Les Misérables**, extract from book, 5362
- Lesseps, Ferdinand de**, made the Suez Canal, 4258
- Letchworth**, its garden city, 2875
- Letold of Tournay**, crusader, 1588
- Lettering**, printing and fancy lettering, with pictures, 4879
- Letters**, how our letters come to us, with pictures, 3321
- why they have to be stamped, 4116
- Letton, John**, started printing, 3572
- Lettuces**, how to grow them, 573, 3922
- must have moisture, 3398
- time to sow them, 2971, 3278
- Leutza**, battle of, 1304
- Leutze, Emanuel**, his "Washington crossing the Delaware," a picture, 4135, 4149
- Levant, The**, 3016
- Lever, Charles**, story of his life, 2903
- Le Verrier, Urbain**, astronomer, 2429
- Lever**, the different kinds, 3673
- why they make a weak man strong, 6166
- Lewes**, battle of, 600
- Lewis, Meriwether**, explorations of, 1396
- Lewis and Clark Expedition**, explores the Rocky Mountains, 1396, 3534
- Lexington**, battle of, 983
- Lexington, Va.**, 5983
- Leyden**, plan of, picture, 3553
- siege of, 3351, 3460
- town in Holland, 3456
- university founded, 3554
- Leyden jar**, discovered, 2115
- Lhasa**, entered by the British, 3938
- picture, 3935
- Liberator (The)**, a newspaper, 3535
- Liberia**, independent state in Africa, 4262
- Liberty Bell**, 6202
- Liberty Statue**, in New York Harbour, a picture, 2666
- presented, 3537

INDEX

Libraries, their work for children, 3199
 Library of Parliament, Ottawa, picture, 4303
 Library of the University of Toronto, picture, 1755
Library of Congress, The, description, 1710
Lichtenberger, André, author of *The Sad Heart of Little Trott*, 3209
Lick observatory, its wonderful telescope, with picture, 1947
 nebula photographed, 2865
 nebulae discovered, 2861
Liebig, Baron, chloroform invented, 1871
 his life, 854; with picture, 851
 his opinion of meat extracts, 3113
Liège, great engineering centre, 3464

LIFE

The Child's Book of Its Own Life

The following are actual headings of the chapters in this section; the separate entries appear below, and in their proper places in the index.
 food and its uses, 2695
 forest of nerves within us, 3561
 fresh air and healthy lives, 1787
 hearing and speaking, 3953
 how and when to eat, 3045
 how life began on the earth, 167
 how life came out of the sea, 359
 how the plant lives on air, 285
 how to eat and be healthy, 2343
 how to remember, 4793
 how to think, 5025
 how your body is built up, 2437
 Jack's fresh air supply, 6179
 Jack's wireless telephone, 6291
 Jack's wonderful pump, 6091
 life and the lungs, 1633
 living things around us, 61
 Nature's wonderful food, 2791
 our lives and the nation, 5281
 our muscles and their masters, 2625
 our unseen friends and foes, 903
 plant's wonderful secret, 227
 seeing colours, 4507
 smell and taste, 4627
 talking and singing, 4073
 tea, coffee, and tobacco, 3315
 the bread by which we live, 2923
 the great corridor, 5911
 the hair and the nails, 1961
 the head and the limbs, 2541
 the heart, the living pump, 1579
 the kitchen of Jack's house, 6015
 the light in our eyes, 4401
 the making of the body, 659
 the marvel of hearing, 3867
 the master of the body, 4731
 the most mysterious thing in the world, 5761
 the mouth and eating, 2205
 the mouth and the teeth, 2097
 the mystery of the brain, 3715
 the parts of the brain, 3775
 the parts of the eye, 4293
 the real value of foods, 3109
 the red cells of the blood, 1383
 the simplest kind of life, 1003
 the skin and its uses, 1909
 the story of the eye, 4213
 the tiniest living things, 781
 the value of meat as food, 3213
 the white cells of the blood, 1441
 the wonderful river of air, 6251
 what happens when we think, 4939
 what life is made of, 1181
 where life really is, 1101
 why life needs the land, 545
 why we do things, 5131
Life, cannot exist without liquid water, 359
 depends on ferments, 4052
 great heat is fatal to life, 4052
 have we ever lived before, 5789
 how long it has existed on earth, 4744
 length of life, 3835
 life began in the sea, picture, 169
 life exists on other worlds, 3436
 what and where it is, 61, 62
Life and Voyages of Christopher Columbus, extract from the book, 5506

Lifeboat, its heavy iron keel, 3838
 pictures, 4425, 4429
 race for the, story, 2951
Ligaments, bind the joints, 2625
 fibres in our body, 2441
Light, air effects light, 1128
 bent by what it passes through, 2230, 5041
 colour the pitch of light, 5174
 colours in, 5041
 different kinds of light, 5044
 different ways it is given out, 3377
 electric theory of light, 5176
 enters our bodies, 2697
 forms that we cannot see, 5039
 gets fainter as it travels, 2503
 has a pushing power, 2497
 has different powers, 1993
 has no weight but pressure, 1775, 5040
 how it affects colours, 4339
 how it passes into the eye, 4401
 how light affects our breathing, 1909
 how light travels, 3688; picture, 2503
 how man learned to strike a light, picture, 775
 how some people see light, 156
 how we should light our homes, 4510
 is a kind of wave, 1060, 3762, 3977, 5042
 is a state of motion in the ether, 3466
 its laws like those of radiant heat, 4320
 its movement, 5040, 5173
 its refraction, 4584, 5177
 light and colour, 5173
 light of the fire inside the earth, 1060
 light that shines over the sea, picture, face 737
 luminous matter and its atoms, 5043
 men who gave us light, 653
 necessary for life, 230
 Newton's idea of light, 5040
 polarisation of light, 5173
 rapidity of motion of, 5640
 rate at which radiant light travels, 4180
 rate of light's movement, 1578, 1774, 1941, 4582
 reflection of light, 5177
 things transparent to light, 4320
 transformation into heat, 5176
 travels very rapidly, 147, 777
 wave-lengths of light, 5175
 we cannot see light and darkness at the same time, 3092
 what causes a light to be yellow, 1780
 what happens when light goes out, 3432
 what it is, 1267
 what it is made of, 2797, 5039
 what the blue light seen on the sea at night is, 3694
 what the interference of light is, 1993
 why it cannot turn a corner, 6165
 why it is red when we shut our eyes, 426
 why it passes through thin metals, 3861
 why light gives light, 4822
 why light keeps us awake, 1272
 why spinning lights make rings, 511
Light things, why they look larger than dark things, 3382
Lighthouse, how built, with pictures, 737, 739
 picture, 4427
Lightning, can be seen for a great distance, 2503
 how it kills people, 3688
 its electricity passes into the earth, 3688
 often destroys hemlocks, 5440
 sky does not open, 2074
 why it strikes certain things, 2875
Lightning-rod, invention of, 2667
Lights, why a light goes out in water but flares up in paraffin, 4114
Ligny, battle of, 4364
Ligurian Republic, formed, 3016
Liliuokalani, Queen, of Hawaii, 2181
Lille, manufacturing town in France, 2396
Lily, different kinds, 5271
 making patterns with, picture, 3375
 pictures, 5278
Lily of the valley, 5272
Lily Tower, window, picture, 2790
Lima, capital of Peru, 4574; picture, 4573
 statue of Bolivar, 4506
Limbs, how animals use their limbs, 664
 how limbs were formed, 662
Line, exists in the sun, 2088
 its Latin name, 1669

INDEX

- Lime**, salt that strengthens the bones, 2698
 use in purifying beet-juice, picture, 695
 valuable manure, 2254
 where its heat comes from, 4338
 why old lime is used on new skins, 6168
- Limestone**, what it is like, with picture, 5197
 where it is found, 2886, 4246
- Limestone City, The**, Kingston, Ont., 5425
- Lime tree**, pictures, 3183
 section of twig, through the microscope, picture, 2321
- Limoges**, noted for china, 2396
- Limpets**, how they live, 2590
 pictures, 1417, 2589
- Lincoln, A.**, administration, 3537
 as president, 2012
 assassination of, 2022, 3536
 elected president, 2010
 Emancipation Proclamation, 2016
 life, 793
 offered command to R. E. Lee, 4466
 pictures, 787, 3532, 4840
 Thanksgiving proclamation, 4467
- Lincoln's Birthday**, why celebrated, 4464
- Lincoln, Mary Todd**, in White House, 391
 portrait, 387
- Lincoln Park**, in Chicago, picture, 5515
- Lind, Jenny**, life and art of, with pictures, 5495
 picture of, 5495
- Linden**, name for the lime-tree, 3183
- Lindisfarne**, its beautiful abbey, 430
- Lindsay, Lady Anne**, wrote *Auld Robin Gray*, 3742
- Line**, how to walk a straight line, 6063
- Lines**, production of in United States, 2664
- Lines**, how to draw straight lines, 1213
- Ling**, Chinese for mountain, 106
- Ling**, its eggs, 201
- Linnaea borealis**, the Twin-flower, 3050
- Linnaeus, Carolus**, floral clock made, 3950
 life and portrait, 851-2
 return from ramble, picture, 850
 why he gave plants Latin names, 4235
- Linnets**, bird, pictures, 2059, 2061
 egg, picture, 1744
 how long it lives, 2328
 its song, 2052, 2058
- Linotype machine**, how it works, with pictures, 891
- Linseed**, may be grown without soil, 2563
- L'Insurgent**, and the Constellation, 2900
- Linton, Mrs. Lynn**, life, 2599; picture, 2593
- Linton Falls**, flood, story, and picture, 4829
- Lion**, a coward, 5524
 American lion: see Puma
 and four bulls, fable, with picture, 3508
 and the cat, 5421
 his habits, 5827
 how captured, 6148
 how he catches the zebra, 5828
 how he lives, 5827
 how long it lives, 2328
 how to make a stuffed lion, with pictures, 715
 in England long ago, 49, 192
 in love, fable, with picture, 4804
 in the royal arms of Scotland, 3082
 stories about, 5349, 5350, 5723, 5724, 5728; picture, 5725
 unspoken language of, 5324
 what kind of animal it is, 132
 when attacked by natives with a spear, 5830
- Pictures of Lions**
- caged lion, 3129
 head of lion, 1513; frontispiece facing 5173
 lion and lioness, with young, 130
 lion and tiger, in colour, 133
 pictures, 51, 133, 5327, 5827, 5829
 rampant lion of Scotland, 8079
- Lion of St. Mark**, monument, with picture, 5005, 5008
- Lionel**, duke of Clarence, in Ireland, 752
- Lions**, lord of the, story, 2608
- Lions, Gulf of**, why so-called, 2394
- Lipped mitres**, how to make, 1346
- Lippi, Filippino**, painter, 4950
 portrait, 4945
- Lippi, Fra Filippo**, painter, 4950
 portrait, 4945
- Lips**, supplied with many nerves, 2205
- Liquid air**, colder than ice, 4050
 experiments, pictures, 4047, 4049
- Liquidambar**, description, 5624
 picture, 5627
- Liquids**, how to test reaction of, 1799
 known in science as fluids, 3941
 shrink and expand, picture, 4369
 viscous and mobile, 5020
 what mobile liquids are, 2505; 5020
 why some liquids mix, 37
 why they run up a tube, 4825
- Lisbon**, city of Portugal, 3356, 3360
- Lisele, Guillaume**, his map, 4041
- Lisgar, Lord**, governor-general, 1248
- Lisle, Rouget de**, author of the *Marseillaise*, 3737, 4688; picture, 2269; poem: see Poetry Index
- Lissard, Castle**, in Ireland, 481
- Lister, Joseph**, improved microscope, 2320
- Lister, Lord**, and use of carbolic acid, 2507
 education, 5752
 pictures, 4195, 5753
 what he has done for surgery, 4203, 5752-5756
 why we are grateful to him, 5751
- Liszt, Franz**, pianist-composer, 3252
- Litchfield, Grace D.**: see Poetry Index
- Lithium**, its specific gravity, 3816
- Lithuanians**, peasant girls, picture, 3747
 where they lived, 3626
- Litmus**, its use, 1799
- Little auk**, with picture, 1632, 1631
- Little Bear constellation**, its legend, 3314
- Little Belt**, what it is, 3598
- Little Claus and Big Claus**, story, 323
 written by Hans Andersen, 1468
- Little Dorrit**, the story of the novel, 2435
- Little Mermaid**, by Hans Andersen, 1468
- Little Problems**, 102, 239, 458, 582, 723, 831, 1070, 1080, 1288, 1349, 1512, 1516, 1519, 1818
- Little Mother's League**, its work, 3194
- Little Red Riding Hood**, story, 2140; with picture in colour, face 2140
 when the story got its present form, 1467
- Little Red Shoes**, story, with picture, 332
- Little Russia**, where it is, 3747
- Little Women and Good Wives**, story of the book, 5143
- Liver**, largest gland in body, 2343, 4114
- Liver-leaf**, the Hepatica, 2837
- Liverpool**, became a great city, 1096
 mono-rail to Manchester, 91
- Living silver**, name for quicksilver, 154
- Livingston, Robert**, portrait, 987
- Livingstone, David**, African exploration, 1100
 body was carried to Zanzibar, 1373
 burial in Westminster Abbey, 4252
 discovered the Victoria Falls, 4747
 his pet chimpanzee, 602
 how he died, 278
 last journey, picture, 278
 meeting with Stanley, picture, 284
 story of his life in Africa, 282, 3324
- Living things**, all living things breathe, 167
 how they have changed, 46
 living things cast up by sea, picture, 1410
 must have food to live, 163
 things living around us, 61
 tiniest living things, 781
 two great kinds of living things, 63
 two kinds of living things, picture, 64
- Livonia**, gained by Sweden, 3596
- Livy**, lived in time of Augustus, 5266
- Lizard Head**, the mermaid of, story, 1321
- Lizards**, change of colour, 2453
 different kinds of lizards, 1219
 lizard that breaks in two, picture, 1226
 of long ago, 48; with pictures, 44, 49
 pictures, in colour, 1226, 1227
 the tuatera, 5570
 their ears, 155
 where lizards live, 1218
- Llama**, found in Peru, 4574
 lives in South America, 275
 pictures, 275, 4497, 4503
 supposed to be Incas' property, 4504
 what it is like, 277
- Llanos**, plains of the Orinoco, 4500
- Llanwrin**, legend of the forest of yew, 2648
- Llewellyn, Prince**, fought for Wales, 113
- Loadline**, what it is, with picture, 4565
- Loadstone**, attracts metals, 2113, 5471

INDEX

Lob Nor, Lake, dried up, 3074
 reached by Sven Hedin, 3936
Lobelia, belongs to bellflower family, 4112
Lobsters, life-story, 2586
 of Canada, 3898
 picture, 2585
 protection of young, 5479
 why they turn red when boiled, 2623
Lock corners, used in woodwork, 1347
Lock-outs, explanation of, 4092
Locke, John, on the mind, 4732, 4939, 5026
 picture, 4625
 showed how we make skin sensitive, 1963
 what he taught, 4621
Locks, description of, with pictures, 5371
Lock-heart, Sir Simon, carried Bruce's heart, 3084
Lockyer, Sir Norman, invented astronomical instrument, 2086
 name given to element in sun's corona, 2088
Locomotion, its meaning, 3468
Locust, how men fight it, picture, 3138
 its life-story, 3140
 South African locust storm, picture, 3139
Locust-tree, blossom, picture, 4486
 flowering, 4494
 honey, 5622
 pictures, 3655, 5629
Lodge, Sir Oliver, and fog dispersion, 3090
Loess, name of a soil, 106
Lofoden Islands, off Norway, 3601
Logan, Gen. John A., instituted Decoration Day, 4469
Logan, John E.: see Poetry Index
Logs, brought out of Canadian woods, 3786
 from Australia, picture, 1359
 log jam, picture, 4095
Lohengrin, legend and opera, 5093
Loire, longest river in France, 2394
Lombardo family, sculptors and painters, 1254
Lombards, settled in Italy, 2522, 3014
Lombardy, conquered by Napoleon, 3360
 crown of Lombardy, 3016
 province of Italy, 3012
 the little Lombard sentinel, story, and pictures, 4936, 4938
Lombardy poplar, with picture, 3189
London, burnt by Northmen, 430
 Fleet Street, remains found, 2887
 great builders of London, 1157
 Roman city, 198
 telephone exchange, 350
 why its policemen are called "bobbies" and "peelers," 5382
 why so called, 5384

Pictures of London

birdseye view, 1750
 Central Telegraph Office, 3523
 map of part of City, 1750
 monument to fire of London, 5009
 Pool of London, 2076
 water that comes to London, 36
London Bridge, first bridge, 19
 picture, 4838
London Company, land granted to the, 513
London pride, a wild flower, 5271
 its family, 4112
Lonely old woman of Morocco, story, 5316
Longfellow, Henry Wadsworth, life, 1480
 pictures, 1475, 1479
 poems: see Poetry Index
Long-glanded snake, its poison gland, 1378
Long Island, battle of, 988
Longitude, what it is, 3036
Longnor, the white lady of, legend, 465
Long Parliament, sat for twelve years, 1023
Longships Lighthouse, picture, 4427
Longstone Lighthouse, 1733; picture, 1735
Longstreet, General, at Chickamauga, 2018
Long-tailed bird of paradise, 1738
Long-tailed ichneumon, picture, 3257
Loofah, what it is, 3434
Lookout Mountain, battle of, 2018
Lord of the Lions, story, 2608
Lord of the White Elephant, 1880
Lord of the Yellow Land, 106
Lords, of the grey and white castles, story, with pictures, 1897
Lorenzo, the Magnificent, art patron, 2784
 made Florence a centre of learning, 3156
 pictures, 4169, 5025

Loris, kind of lemur, 608
Lorne, Marquis of, as governor, 1248
Lorraine, Claude, portrait, 4945
 story of his life, 4954
Lorraine, given up to Germany, 2277
 taken by the French, 2528
Lotus, Egyptians use for decoration, 3374
 making patterns with lotus, picture, 3375
Loudan, Mouat, his picture of Elaine, 1184
Louis VII., of France, 1589
Louis VIII., of France, 598
Louis IX., of France, pictures, 1591, 2062
 took part in the Crusades, 1592, 2066
Louis XI., of France, a good king, 2069
 at war with Charles the Bold, 3460
 visiting his peasants, picture, 2069
Louis XII., of France, how he treated the cruel nobleman, story, 3647
Louis XIV., of France, bought Dunkirk, 1023
 kept the Germans from the Rhine, 2528
 reigned over seventy years, 2070
 said, "The Pyrenees are no more," 2392
 wanted to reinstate James II., 2708
 went to war with England, 1029, 2540
Louis XV., of France, his death, 2267
 persecuted the Protestants, 2394
Louis XVI., of France, among his people, picture, 2069
 as a locksmith, 2268
 began to reign when young, 2267
 condemned to death, 2272
 execution, 1141, 4060
 flight from Paris, picture, 4057
 in the Temple prison, picture, 4058
 portrait, 4053
 revolution against him, 4053, 4054
 tried to carry out reforms, 2069
 tried to escape from France, 2270
Louis XVIII., of France, 4364
Louisa, queen of Prussia, and the cornflower, story, 1677
 insulted by Napoleon, 2575
Louisburg, battle of, 881, 884
 captured, 540
Louise, Lake, picture, 5608
Louisiana, admitted, 1824, 3534
 description of, 5985
 discovery, 264
 its industries, 5985
 purchase of, 1396, 3534, 3538
 secedes, 2010, 3536
 settled, 1824, 4036
Lounsbury, Charles, his will, 5203
Louvre (Le), description of, with pictures, 5333
Love, its value in the world, 5850
 laughs at locksmiths, story, 1525
 that is stronger than death, story, 4071
Love (The) of a Mother's Heart, picture, 5885
Love-bird, parrot, 1747; picture, 1743
Love-in-a-mist, flower, 233
Lover, Samuel, poem: see Poetry Index
 wrote Rory O'More, 3743
Low Countries: see Netherlands
Lowell, James Russell, his life, 1484
 poems: see Poetry Index
 portrait, 1475
Lowell, Professor, his discoveries, 3072
Lower Canada, as a province, 745, 1239
Loyola, St. Ignatius de, founds an order, 5812
 his life, 3990
 picture, 3981
Lubbock, Sir John: see Avebury
Lubeck, joined Hanseatic League, 2526
Lucca oil, use in making scent, 1501
Lucerne, description of, 5676
 monument to the Swiss Guards 1804, 2272; picture, 2963
Lucerne, Lake, in Switzerland, 2960, 2964
Lu-chu Islands, south of Japan, 363
Lucius, British king, 4635
Luck, a box of good luck, story, 2304
 what it is, 1271
Lucknow, siege, 1099, 1706
Lucretia, wife of a Roman noble, 413
Lucy, Sir Thomas, 5963
Ludwig I., of Bavaria, 2755
Ludwig II., of Bavaria, 3252
Lugworm, 2587; picture, 2589

INDEX

Luke, Mrs.: see Poetry Index
Lukin, Lionel, invented the lifeboat, 4429
Lullaby, what it is, 470
Luminous things, how they differ from non-luminous, 5178
 what they are, 3977, 5043
Lump fish, how many eggs it lays, 201
Lump-sucker, picture, 208
Lundy's Lane, battle of, 746, 1399
Lung-fish, breathes by lungs, 2446
 can be brought alive from America, 2675
 picture, 2447
Lungs, bellows in Jack's house, 6252
 how the air gets into our lungs, 1787
 how the lung is made, 1636
 life and the lungs, 1633
 pictures, 1633, 1636, 1637
 position inside chest, 1581, 1634
 purify the blood, 1583
Lungwort, its family, 4112
Lupercus, Roman god, 4516
Lusitania, Roman province in Spain, 3355
Luther, Martin, defied the pope, 2527, 2708
 great hymn-maker, 1996
 pictures, 1999
Lutzen, battle of, 2528
Luxor, ruins of temples, 4787, 5823
 statue of Rameses II., picture, 5007
Luzon, scenes on, picture, 2185
Lycurgus, settled laws of Sparta, 5124
Lydia, a brave little Quakeress, 4531
 conquest by Cyrus, 5058
Lyell, Sir Charles, great geologist, 3228
 his life, 853; portrait, 851
Lynn, Ethel: see Poetry Index
Lynn, Mass., famous shoemaking centre, 3102
Lynx, 49, 140; picture, 136
L Lyons, city, 2394; picture, 2397
Lyre, musical instrument, 1015
Lyre-bird, 1746, 2061; picture, 1743
Lyric, of many kinds, 343
 what it is, 93
 what it is used for, 94
Lysicrates, monument at Athens, 5004
 picture, 5008
Lysippus, great sculptor, 4160
Lyte, Henry Francis, poems: see Poetry Index
 portrait, 1999
 wrote hymns, 2000
Lyttelton, port of New Zealand, 1464
Lytton, Edward Bulwer, Lord, life, 2310
 portrait, 2307

M

McAdam, John London, made roads, 158
M'Alpin, Kenneth: see Kenneth M'Alpin
Macao, settlement in China, 109
 woman and child, picture, 109
Macaroni, drying process, picture, 3022
 preparation of wheat, 2925, 3022
McCarroll, James: see Poetry Index
Macaulay, Lord, his life, 4686; with portrait, 4675
 poems: see Poetry Index
 wrote Lays of Ancient Rome, 1403
Macaw, parrot, 1747; pictures, 51, 1741
Macbeth, usurped throne of Scotland, 3079
Maccabees, Judas, Jewish general, 6220
McClellan, George B., and the Army of the Potomac, 2014
 forced to retreat, 2016
 placed in command, 2013
McClellan, Isaac: see Poetry Index
McClure, Sir Robert, explorer, 4724
 portrait, 4725
McCormick, Cyrus Hall, as inventor, 2668
McDonald, George, castle on the cliff, a story, 5597
 poems: see Poetry Index
 wrote fairy tales, 1474
Macdonald, Sir John A., as premier, 1216
 chairman of Canadian delegation, 1244
 life, work and death, 1248, 4299; with picture, 4301
 resignation and return, 1247
Macdonough, Thomas, commander American fleet, 2902
 picture, 2899
Macdougall, William, as lieutenant-governor, 1246
McDowell, Gen. Irvin, at Bull Run, 2013
Macdowell, Patrick, work on Albert Memorial, 5004
Macedonia, a province of Turkey, 3224
 became a Roman province, 5130
 conquest of Greece, 5130
 formed a compact against Basil II., 3154
 powerful Greek kingdom, 1304
 shepherd, picture, 3225
 war with Rome, 5264
Macedonian, the, and the frigate United States, 1398, 2902
McGee, Thomas D'Arcy: see Poetry Index
McGill University, 6184
 picture, 6185
Machairodus, tiger, picture, 44
Machine, could a, go on for ever, 5958
Machinery, agricultural, 2668
 can a machine be made to count? 5640
 efficiency of: see Efficiency of machinery
 how it produces heat, 4366
 inventions, 2667
 machine worked by the sun, picture, 4365
 to be run by alcohol, 1872
 why we cannot get a perfect machine, 4368
Mackay, A. H., portrait, 5236
Mackay, Charles, poems: see Poetry Index
 song, 3740
McKay Sewing Machine, 3097, 3102
Mackenzie, Alexander, premier of Canada, 1247
Mackenzie, David, discovery of, 5147
MacKenzie, Duncan Stewart, portrait, 5236
Mackenzie, William Lyon, political leader, 746
Mackenzie, a part of New Zealand, picture, 1461
Mackenzie, Canadian district, 1247
Mackenzie River, discovered, 5147
Mackerel, fish, 202; picture, 203
McKinley, William, administration, 3538
 ancestral home, 5463
 assassination, 2418, 3538
 picture, 3532
Mackintosh, Charles, made first waterproofs, 5678
Mackintosh, whence the name, 5678
 why it keeps us dry, 683
McLennan, William: see Poetry Index
MacMillan, Donald B., companion of Peary, 5212
 discovered Greely's old camp, 5214
MacMonnies, Frederick, sculpture of, 3810, 3812, 4850
MacNally, Leonard, wrote a song, 3741
Madagascar, belongs to France, 2400, 4262
Madison, Dolly, her portrait, 387
 in White House, 389
Madison, James, administration, 3534
 as president, 1398, 1825
 picture, 1395, 3532
Madison Square, with picture, 4310, 4311
Madison Square Garden, exhibitions in, 4310
Madonna, and Child, pictures, 4589
Madonna Lily, 1509, 5271
 pictures, 1509, 5273
Madras, captured by the French, 1704
 English factory set up, 1702
 its harbour, 1548
 practically governed by British, 4037
 trading posts in and near, 4036
Madrid, capital of Spain, 3356, 3358
Mæcenæ, patron of poets, 5218
Maelar, Lake, in Sweden, 3600
Maelstrom, famous whirlpool, 4743
Magazine, how to start a school magazine, and pictures, 4767
Magdalena River, 4574
Magdeburg, sugar is made there, 2750
Magellan, Ferdinand, his discoveries, 60, 4502; portrait, 60
Magellan Straits, and their position, 4500; picture, 4499
 why so called, 60
Magenta, battle of, picture, 3021
Mageroe Island, 3601
Maggiore, Lake, its position, 2960, 3012
Maggots, of moths, 5524
Magic answers, a game, 2137
Magic boy fiddler, of Sicily, story, 557
Magic carpet, the, story, and picture, 1683

INDEX

- Magician**, the magician's jacket, and picture, 1615
the story of the magician's forbidden room, and pictures, 1671
- Magic-lantern**, for picture postcards, 99
how the light is got, 1195
how to make a magic-lantern, and pictures, 2767
- Magic pen of truth**, story, 2092
- Magic scissors**, the boy conjurer's, 836
- Magic slippers**, a pair of, story, 2606
- Magic square**, problem, 2350, 2489
- Magic string**, trick, and picture, 101
- Magic tinder-box**, story, and picture, 4126
- Magic tumbler**, trick, 2132
- Magna Carta**, 598, 4715
not signed by King John, 5524
- Magnesia**, battle of, 5264
for cleaning teeth, 2100
- Magnesium**, exists in the sun, 2088
- Magnet**, experiments with, 2119
how the poles attract and repel each other, 5255
moving steel, a picture, 5556
- See also Electro-magnet**
- Magnetic needle**, how it turns to Poles, 5253
registers change of sun's surface, 2084
- Magnetism**, electricity and magnetism, 5253
Faraday's discoveries, 2120
in the earth and sun, 5254
- Magnifying glass**, how it makes the sun burn paper, 2880
why it makes things look bigger, 42
- Magpie**, egg, picture, 1744
magpie pigeon, 2213
picture, 1847
- Magpie moth**, picture in colour, face 2982
- Magyars**, ancestors of Hungarians, 2576
founded Hungary, 2854, 5712
invaded Italy, 3014
invading Austria, picture, 2850
- Maharajah**, prince in India, 1552; picture, 1701
- Mahdi**, rebellion in Egypt, 4260
- Mahmud**, of Ghurni, Mussulman, 1700
- Mahogany**, what it is like, 4998
- Mahoney, F. S.**, poem: see Poetry Index
- Mahout**, elephant-keeper, 6154
- Mahratta**, war with the British, 1706
- Maia**, goddess, legend of, 4518; with picture, 4517
- Maidenhair fern**, 3296
- Mail-coach**, how it began, 4380
- Maine**, and the white pine, 5438
local holidays in, 4470
state of, admitted, 1826, 3534
- Maine**, the, sinking of, 2188, 3538
- Maisonneuve, Paul de Chomedey, Sieur de**, picture of statue of, Montreal, 2246
- Maize**, its value as food, 2926; picture, 2923
stem under microscope, picture, 2321
- Majuba Hill**, Boer victory at, 1770
- Malacca**, obtained from the Dutch, 1879
- Malapterurus**, the thunderer fish, 2451
- Malaria**, germ, picture, 3143
how it is caused, 1386, 3145
how it is prevented, 3146
symptoms, 4549
what causes it, 5641, 5850
- Malayans**, invaded Japan, 364
- Malays**, a kind of fowl, 1513
- Malay States**, flag, picture in colour, face 1640
- Malcolm Canmore**, king of Scotland, 3079
- Malic acid**, found in apples, 1799, 4749
- Malines**, woollen manufacture, 3458
- Mallet, Claude**, rebellion, 330
- Mallet, David**, song, 568
wrote a play with James Thompson, 3738
- Mallet, Edward**, British ambassador, 319
- Mallow**, common, picture, 4284
- Malope**, plant, picture, 5280
- Malplaquet**, battle of, 2530
- Malta**, history of Malta, 1875
surrendered to the British, picture, 1879
- Mamelukes**, how they rose to power, 4256
ruled Egypt, 2912
- Mammals**, have a backbone, 661
the highest group of animals, 663
- Mammoth**, lived in this country, 192
pictures, 44, 5567
remains on the Arctic shores, 3678
what it is, 47
- Mammoth Cave**, description, 583
its stalactites, with picture, 4816
- Man**, **Isle of**, giants and the Isle of Man, legend, 3166
water-wheel at Laxey, picture, 2108
- Man who broke the news**, 6201
- Manakin**, bird, 1748; picture, 1736
- Manaos**, a port of Brazil, 4567
- Manatee**, animal, and picture, 1087, 1090
- Manchuria**, a province of China, 3752, 105
- Manchus**, became the rulers of China, 112
- Manchu lady and gentleman**, picture, 106
- Mandrill**, baboon, and picture, 607, 603
- Manetho**, his history of Egypt, 4792
- Manganese**, in Canada, 5600, 5604
- Manila Bay**, battle of, 2134, 2188
- Manila hemp**, is made into rope, 3991
pictures, 3991, 3992
- Manitoba**, admitted to confederation, 220, 1246
education in, 5234
minerals, 5599
nitrates in its soil, 3341
province of Canada, 214, 216, 5366
- Manlius, Capitolinus**, defended Capitol, 554
- Manlius Torquatus, Titus**, consul, 2680
- Manny, Sir Walter**, at Hennebont, 2478
- Man-of-war**, Portuguese, animal, picture, 2337
- Mantel-border**, in appliqué work, how to make, and picture, 4996
- Mantis**, a strange insect, 3263
- Mann**, a law-giver of the Hindoos, 1700
- Manure**, how to manure soil, 2254, 4462
keeps the ground moist, 3514
why it makes plants grow, 3973
- Manuzio, Aldo**, a famous printer, 3574
- Manx cat**, 1573; picture, 505
- Many-banded mullet**, picture in colour, face 200
- Maori**, Maori chief, picture, 1463
natives of New Zealand, 1459, 4038
- Map**, America, 8
bird's-eye view of Hungary, 5713
bird's-eye view of Ireland, 5462
France, 2063, 2072, 2390
growth of the German Empire, 2574
how the maps are made, 1749
making maps in sand, and pictures, 3821
Switzerland, part of, 5670
- Maple-leaf**, the emblem of Canada, 2461, 3783
- Maple-tree**, pictures, 696, 3187
red, blossoms of, 2835
silver, blossoms of, 2835
striped, with pictures, 4489, 4490, 5621
sugar, 2461, 2835, 5622; picture, 5625
the maple-tree, 2461
yields sugar, 693, 2461
- Marabou stork**, 1956; picture, 1953
- Marat, Jean Paul**, killed by Charlotte Corday, 2274, 4062; portrait, 4053
- Marathon**, battle of, 1803, 5062, 5129
- Marathon race**, how the runners fed, 3111
- Marble**, Carrara marble, 3022
its specific gravity, 3816
what it is made of, 1669, 1798
- Marbled white butterfly**, 2992
- Marble Faun**, extract from the book, 5432
- Marbles**, game, 5106
- March**, how it got its name, 4516
- March to the Sea**, Sherman's, 2020
- Marconi, Guglielmo**, invented wireless telegraphy, 2476; portrait, 2467
- Marcus Aurelius**, emperor of Rome, 533, 5795, 5802
his life and rule as emperor, 5796
his sayings, 5797
on disliking people, 5283; picture, 534
picture, 5799
- Mardi Gras**, in New Orleans, 5985
- Marduk**, god of Assyria, 4981
- Marengo**, battle of, 2274
- Margaret**, daughter of Henry VII., 3086
- Margaret**, Maid of Norway, 748, 3086
- Margaret**, of Anjou, wife of Henry VI. of England, fled to France, 756
in the Wars of the Roses, 2533
saved by a robber, picture, 755
- Margaret, St.**, 3079; picture, 3080
- Margaret River Cave**, Western Australia, stalactites in, and picture, 1296
- Margarine**, why it is a good food, 2793
- Marguerites**, how to make of paper, 4140
picture, 579

INDEX

- Marhaus, Sir**, killed by Tristram, 3211
- Marian Harland**: see Mrs. M. V. H. Terhune
- Maria Theresa**, of Austria, appeal to the Hungarians, 5712; picture, 2853
- fled to Hungary, 2530
- took part of Poland, 2578
- Marie Antoinette**, queen of France, her early years as queen, 2267
- how she died, 2272, 4060
- pictures, 1141, 4053, 4057, 4058
- story of her last sacrifice, 1141
- Marie Louise**, wife of Napoleon, 2858
- Marietta**, settlement and naming of, 1822
- Marigold**, marsh, 5032
- picture, 5033
- Marine or Naval Commission**, appointed, 2897
- Marion, Francis**, and the sweet-potatoes, 990
- portrait, 985
- Marionette**, the living marionette, an entertainment, with pictures, 2249
- Maritime Provinces**, of Canada, with pictures, 5601
- Maritza River**, in Turkey, 3149, 3222
- Marius, Gaius**, Roman general, 417, 5265
- Marjorie**, in the Tale of a Shop-window, 5691
- Mark**, king of Cornwall, 3212
- Markham, Edwin**: see Poetry Index
- Marlborough, John Churchill, Duke of**, favourite motto, 1029
- his victories, 565, 2530, 2540
- Marlborough, Sarah, Duchess of**, a favourite of Queen Anne, 2540
- how she sat in rags at Westminster, with picture, 4640
- Marlborough, New Zealand province**, 1464
- Marlinespike**, used by sailors, 235
- what it is, 4566; with picture, 4565
- Marlowe, Christopher**, a poet, 3330
- his "blank verse," 5750
- his "jiggling rhymes," 5750
- poems: see Poetry Index
- Marmont, A.**, Napoleon's marshal, 4362
- Marmora, Sea of**, 3149
- Marmoset**, monkey, 608; picture, 607
- Marmot**, animal, 670
- dwelling, 5416; pictures, 667, 5415
- Marne River**, joins the Seine, 2394
- Marpessa**, choice of Marpessa, story, 1432
- Marpessa spider**, stalking a fly, picture, 3301
- Marquette, Father**, a Jesuit missionary, 880
- explorations and death, 264
- the priest who loved the Indians, picture, 6025
- visited site of Chicago, 5513
- Marryat, Frederick**, his books:
- Jacob Faithful, with picture, 2197
- Masterman Ready, with picture, 2025
- Midshipman Easy, with picture, 2200
- Peter Simple, 2028
- Marrying a rope**, with picture, 3284
- Mars**, a Roman god of war, 1940, 4516
- how the Romans worshipped him, 4516
- picture, 4516
- Mars**, a planet, 146
- bigger than the moon, 3072
- deserts in, 3073
- dryness of, 3004, 3072
- has no mountains, 3229
- has two moons, 2282
- has water on it, 3382
- how far it is from the sun, 150
- how it got its name, 2234
- its atmosphere, 4321, 5024
- its canals, 4120
- its continents pointed to the south, 3071
- its inhabitants, 3436
- likeness to the earth, 1949
- pictures, 2425
- what is known about it, 2426
- Marsden, Samuel**, missionary, 1460
- Marseilles**, its trade, 2398; picture, 2397
- where it is, 2394
- Marseillaise, The**, patriots of the Garde march to Paris, 2270, 2394
- story of the song, 2272, 3737
- written by Rouget de Lisle, 1121; picture, 2269
- Marshall, Thomas Riley**, picture, 5055
- Marsh bent grass**, picture, 2980
- Marsh carex**, with picture, 4968
- Marsh-elder**, description of, 5190
- picture, 5189
- Marsh-gas**, causes the will-o'-the-wisp, 3542
- has no smell, 4628
- what it is, 1289, 1870
- Marsh mallow**, picture, 5189
- Marsh mallows**, how to make, 3513
- Marsh marigolds**, 2839, pictures, 3735
- Marsh woundwort**, 4970; picture, 4967
- Marston Moor**, battle of, 1109, 1888, 1895
- Marsupials**, description, 5479
- what they are, 860
- Marten**, description, 4820
- Martin V.**, pope, 4950
- Martin, Don**, in Mexican Legend, 5231
- Martin, Homer**, life and art, 4151
- picture by, 4156
- Martin, Jenny**, tale of, 5422
- Martin, bird**, its history, 2210, 2212; pictures, 2211
- purple, 3494
- Martin Chuzzlewit**, story of book, 2637
- Martinea**, battle of, 1304
- Martinique**, earthquake in, 1878
- Martino, Giovanni di**, sculptor, 1154
- Martynia seed-pod**, picture, 3833
- Martyrs of the English Reformation**, 5067
- Marvel du jour**, moth, picture, 3413
- Marvell, Andrew**, how he refused a bribe, story, with picture, 4557
- poems: see Poetry Index
- worked with Milton, 3336
- Marvin, Ross G.**, death, 5213
- Peary's secretary, 5212
- Mary**, daughter of Charles I. of England, 1024
- Mary**, duchess of Burgundy, 3460
- Mary**, of Guise, 3088
- Mary**, of Modena, wife of James II., 1029
- Mary**, queen of Scots, her life, 846, 3088
- married Francis II., 2068
- pictures, 847, 3078, 3087
- Mary I.**, of England, daughter of Henry VIII., 2534, 5347
- her reign, 845
- married Philip of Spain, 3356
- Mary II.**, of England, became queen, 2535
- married William of Orange, 3463
- Mary-buds**, the Marsh-marigold, 2833
- "Mary Elizabeth"**, candy merchant, 3066
- Maryland**, colony of, 520
- remains in Union, 2012
- slave state, 2010
- Maryland, My Maryland**, history of song, 2957
- Marzipan**, how to make, 3512
- Masaccio**, his painting, The Tribute Money, 4588
- his work as a painter, 4586
- Mascagni, Pietro**, composer, 3252
- Masegne family**, famous sculptors, 1254
- Masham, Mrs.**, a favourite of Queen Anne, 2540
- Maskelyne, Nevil**, his invention, 1662
- Mason, James M.**, a Confederate commissioner, 2014
- Mason, John**, founded the New Hampshire Colony, 525
- Mason, Sir Josiah**, made metal pens, 8400
- Mason-bird**, nests of, 5784
- Mason spider**, the trapdoor spider, 3302
- Mass**, a Roman Catholic service, 3243
- Mass**, difference between mass and weight, 543
- in weights and measures, 3671
- Massachusetts**, local holidays in, 4470
- Massachusetts Bay Colony**, founded, 518
- religion of, 524
- Masséna, André**, Napoleon's marshal, 4362
- Massif Central**, high lands in France, 2392
- Massinger, Philip**, a poet, 3330
- Mast**, different kinds, 3913
- picture, 4565
- some of the parts of a mast, 4566
- Masterman Ready**, story of the book, with picture, 2025
- Mastodon**, elephant, 50; pictures, 44, 3679
- Mat**, how to make a wool mat, with picture, 2486
- Matabele**, a people of Africa, 1766
- Matapan, Cape**, its rocks, 737
- Match**, how it is made, with pictures, 2358
- its history, with pictures, 774
- pulling one match through another, trick, with picture, 718
- tricks to do with matches, with pictures, 103, 1818, 3611

INDEX

- Match**, why it flares up when held upside down, 4823
 why it goes out when we blow it, 160
 why it strikes, 773
- Matchbox**, chest of drawers, with picture, 103
 trick with, 336
- Match-stand**, how to model it, 6061
- Maté**, Paraguayan tea, 4568
- Materialism**, of present-day people, 4439
 what it means, 4439, 4731
- Mat grass**, picture, 2982
- Mathematical optics**, 5178
- Mattathias**, his rebellion, 117
- Matter**, a kind of electricity, 5255
 does not disappear at absolute zero, 4049
 how it may exist, 837
 how its atoms set up waves, 5043
 how movement changes matter, 3465
 made up of elements, 637
 matter not found on the earth, 5023
 movements of atoms, 4342
 of the body, 1443
 the different kinds of matter, 838, 3941
- Matterhorn**, mountain, 2960; picture, 2958
- Matthew**, St., in Ethiopia, 2330
- Matthias**, king of Hungary, 5716
 his library the Corvina, 5716
- Mattress**, when sleeping out, 4032
- Maud**, daughter of Henry I. of England, 592
 granted land to abbey at Reading, 592
 helped by David I. of Scotland, 3080
 story of her life, 2532
 wars with Stephen, 594, 2702
- Maud**, wife of Henry I. of England, 592
- Mauretania**, ship, with picture, 2473
- Maurice**, prince of Orange, 3462
- Mauritius Islands**, taken from French, 1876
- Mausoleum**, tomb of King Mausolus, picture, 5566
- Mauve**, colour, discovered; 2507
- Maximilian**, emperor of Mexico, 4390
- Maximilian I.**, emperor of Holy Roman Empire, married Duchess of Burgundy, 3460
 tomb in Innsbruck Cathedral, 2854
 was a Hapsburg, 2527
- Maximinus**, cruelty to St. Catherine, 1010
- Maxwell, James Clerk**, on electric waves of light, 5042
 teaching pressure of light, 1775, 5040
- May**, flower, a name for hawthorn, 3449
- May**, month, how it got its name, 4518
- Mayas**, an ancient American tribe, 4384
- Mayence**, a German city, 2754
- Mayflower**, Pilgrim Fathers' voyage, 1022
- Mayflower**, Canada, 2841
- May fly**, 3262; picture, 3259
- Maynard, John**, how he steered a ship on fire to safety, with picture, 3659
- May-pinks**: see Arbutus, Trailing
- Mazagan**, Moroccan seaport, picture, 4255
- Maze**, a puzzle, 5358
- Mazzini, Joseph**, his work for Italy, 4100
 portrait, 4097
- Meade, Gen'l George G.**, at Gettysburg, 2016
 picture, 2017
- Meadow barley**, with picture, 1339
- Meadow foxtail grass**, picture, 2977
- Meadow grasses**, pictures, 1339, 1341, 2979
- Meadowlarks**, 3483
- Meadow pipit**, egg, picture in colour, 1744
- Meadow-rue**, Alpine, picture, 4832
 description, 5032
 picture, 5033
- Meadow soft grass**, picture, 1343
- Meadowsweet**, use as medicine, 4964
 what it is like, 4966; with picture, 4964
- Measure for Measure**, story of play, 549
- Measurement**, by beaver-skins, 5150
 by metric system, 5641
 curious way of measuring a tree, 5900
 how high is the hat, 5900
 how things are measured, 3669
 how to measure the pressure of the atmosphere, 3944
 of heights in South America, 5666
 of things from a distance, with picture, 3134, 3135
 size and weight of things, 3813
 to measure a stream, 6013
 to measure a tower with a looking-glass, picture, 5918
- Meat**, American, 2653
 value as food, 3213
- Meat extract**, value as food, 2699
- Mecca**, pilgrimages, 3876; picture, 3001
- Mecklenburg Declaration of Independence**, 984
 holiday celebrating, 4470
- Medea**, daughter of Æetes, 186
 who helped Jason, 186
- Medes**, attacked Athens, 1803
 defeated Assyrians, 4982
 growth of kingdom, 5057
 settled in Asia, 5057
 their religion, 5058
 union with Persia, 5058
 wars with Mesopotamia, 4974
- Medici, Catherine de**, mother of three kings, 2068
 planned St. Bartholomew's Day, 2070
- Medici, Lorenzo de**: see Lorenzo the Magnificent
- Medici, Marie de**, wife of Henry IV. of France, 2070
- Medici family**, pensioned Botticelli, 4950
 their great power, 3013
- Medicine**, the world's great doctors, 4195
 of Canadian Indians, 2773
 why it seems nasty, 3089
- Medicine Hat**, description of town of, 5370
- Medina**, pilgrimages made to, 3876
- Mediterranean Sea**, has a strong British fleet, 1875
 people round, 194
- Medium**, what it is, 4581
- Medusa**, picture, 2334
- Megalosaurus**, a lizard that ate flesh, 48
- Meissonier, Jean Louis**, his picture of the battle of Friedland, 2273
- Melanesia**, forms part of Australasia, 1466
- Melbourne**, the capital of Victoria, 1358
- Melchers, Gari**, an artist, 4152
- Mellville, David**, first lighted house with gas, 657
- Melons**, 642; picture in colour, 650
- Melville Bay**, picture, 4721
- Memorial Day**, history of, 4469
- Memory**, and education, 4794
 association of ideas in, 5029
 how it depends on attention, 4796
 how it may be trained, 821, 5019
 how repetition helps it, 4795
 how to think, 5025
 what an act of memory involves, 4794
 what it is, 4793, 4939
 when it is at its best, 4794
 why old people remember things of long ago, 4794
 why we cannot remember what happened when we were babies, 2458
 why we forget some things, 2458
- Memphis**, built by Menes, 4974

MEN AND WOMEN

Child's Book of Men and Women

- The following are the actual headings of the chapters in this section. The separate entries appear below and in their proper places in the index.
- Men and Women**, Antonio's wonderful lion, 5841
- Chatterton, the wonderful boy, 5317
- Cleopatra of the Nile, 5703
- conquerors of the sea, 2467
- D've ken John Peel? 5493
- early leaders of the Church, 4707
- extraordinary man, an, 5837
- famous American writers, 1475
- famous kings of England, 2701
- famous makers of Rome, 4945
- famous men of science, 851
- famous modern thinkers, 4097
- finding the South Pole, 5051
- four great English poets, 3327
- gloomy (the) King of Spain, 5498
- great builders of London, 1157
- great composers of music, 3243
- great thinkers, 4617
- heroes of the nations, 117
- Jenny Lind, 5495
- kings and queens of Scotland, 3079
- life of Confucius, 5580
- makers of beautiful things, pictures, 6123
- makers of telegraphs and telephones, 4312

INDEX

Men and Women, man who was "never a boy,"

5768
 Margaret Fell, the Quaker, 5835
 men of the great rebellion, 1887
 men who found electricity, 2113
 men who gave us printing, 3567
 men who made the railways, 609
 men who made the world known, 53
 Mohammed and his book, 5889
 Mrs. Hemans, the children's poet; 5468
 Nelson, Wellington, Napoleon, 4355
 peasant girl and empress, 5321
 Scotch lad who became a millionaire, 6275
 Sir Walter Raleigh, 5393
 slaves who became famous, 2909
 some famous monks, 3981
 some famous reformers, 3697
 some founders of religions, 2995
 some great English writers, 4675
 some sayings of Confucius, 5584
 story of Lord Lister, 5751
 the builders of Florence, 2779
 the emperors of Rome, 527
 the explorers of Africa, 279
 the first great men of Rome, 413
 the French revolutionists, 4053
 the great men of Greece, 1301
 the great poets since Milton, 3903
 the great story-tellers, 1725, 2307
 the makers of Venice, 1249
 the men of the Crusades, 1585
 the men who found Australia, 353
 the men who gave us light, 663
 the men who mapped the skies, 1655
 the mother of Thomas à Becket, 5757
 the planter of oak trees, 6128
 the priest who loved the Indians, 6025
 the queens of England, 2532
 the world's great doctors, 4195
 the writers of the hymns, 1995
 the writers of the songs, 3737
 thinker on a throne, 5795
 thousand years of kings, 5941
 twelve British statesmen, 2379
 twelve great painters, 757
 two men I honour, 5398
 stories of the saints, 1007
 uncrowned (an) American Queen, 4907
 Victor Hugo, king of men, 6155
 waiting for Shakespeare, 5745
 what Confucianism means, 5581
 William Postel, 5470
 women story-tellers, 2591
 writers of others lands, 5217
 writers of the fairy books, 1467
Men, aboriginal man, picture, 61
 appearance in America, 13
 can only exist on earth, 3436
 did not always write, 3978
 drawing of man from squares, 1073
 height has not changed much, 2673
 homes of man in all ages, picture, 621
 how man conquered the earth, 624
 how races are being destroyed, 3077
 little man by the secret shore, story, and picture, 4928
 man does not possess less ribs than woman, 5524
 man's sociability, 5281
 man who disappeared, story, 1112
 man who drove downstairs, 5694
 man who gave away, story, and picture, 2166
 man who knew no fear, story, 128
 man who loved children, story, 4177
 man who thought of his comrades, story, 4958
 men who first wrote English, 6019
 men who mapped the skies, 1655
 probably always talked, 3978
 search for a happy, 5689
 the first men lived in caves, 50
 the man who saved his son, story, 1734
 two men I honour, 5398
 when men were good, story, 2092
 where mankind probably first lived, 3005
Menagerie race, game, with picture, 4560
Menai Straits, bridge, 19
Mendelssohn, Felix Bartholdy, how he worked as a boy, 3373
 story of his life, 3250, 6224; portrait, 3243

Mendelssohn, Moses, reformer, 6224
Mending, how to make old things new, 3515
 the right way to mend things, 4249
Mendoza, Antonio de, gold-hunting expedition, 4505
Menelaus, husband of Helen of Troy, 67, 1683
Menendez des Aviles, Pedro, founded St. Augustine, 262
Menes, king of Egypt, 4785, 4974
Men-kau-Ra, a king of Egypt, 4785
Mentone, ancient caves at, 2673
Merak, a star, 2612; pictures, 2611, 2613, 2617
Mercator's projection, with picture, 1751
Merchant of Venice, The, play, 316
Mercia, an old Saxon kingdom, 428
Mercury, a liquid element, 1290
 element, denser than water, 542
 first used in thermometers, 4371
 how to tell if it is pure, 2130
 its specific gravity, 3816
 looks like water-silver, 1670
 mixtures of mercury, 1869
 not attracted by a surface, 160
 Torricelli's experiment with, 3942
 what it is, 154
 what it is used for, 1294
 why iron can float on it, 3757
 why it does not wet our hands, 3694
 will not rise in a tube, 4825
Mercury, lent aid to Perseus, 1049
 bronze figure discovered at Herculaneum, picture, 6136
 how the planet got its name, 2234
 Mercury and the woodman, fable, 2939
 messenger of the gods, 462, 4518
 planet, distance from sun, 150
 what is known about it, 2423
 with Venus, picture, 2425
Meredith, George, famous writer, 2316,
 on names, 4047
 wrote a poem to the skylark, 5137
Merida, an ancient town in Spain, 3352
Meridians of longitude, what they are, with picture, 1750, 1751
Merino sheep, and picture, 377, 378
Merkab, a canopy on a camel's back, 6037
Merlin, a bird, and picture, 1845, 1846
Merlin, the wizard, 868, 1680
Mermald, animals mistaken for, 1088
 the mermaid's pool, legend, 465
Merope, daughter of Ænophon: see Hero
Merrimac, the, and Monitor, 2015
Merry-go-round, garden, how to make, 5915
Merryminad, the little fiddler, story, with picture, 4375
Merv, railway to Afghanistan, 3932
Mesmerism, what it is, 2485
Mesophytes, a class of plants, 5031
Mesopotamia, its people, 4974
 part of Asiatic Turkey, 3873
 separates Persia from Arabia, 3874
 story of its past, 4971
 the mounds and their relics, 4971
Messages at night, flashing, how it may be done, 6250
Messalina, wife of Claudius, 530
Metal, a good conductor of heat, 4183
 can it be poisoned? 5486
 compounds of metals are alkalies, 1799
 dug out of the ground, 288
 exists in stars, 2719
 extraction of, 5537
 good conductor of electricity, 1293
 how it got into the earth, 4234
 minor metals in Canada, 5599
 mixtures of metals are called alloys, 1870
 moved by electro-magnet, 5471
 used in chemical compounds, 1797
 what it is, 1292
 what the fatigue of metals is, 3978
 when men used metal implements, 622
 why it lets light through when beaten thin, 3861
Metallic stars, what they are, 2719
Metal pens, when they came into use, 3400
Metcalfe, Sir Charles, as governor, 1242
Meteorites, pictures, 145, 2500
 what people thought they were, 1577
 what they are, 1863, 1946, 2499, 3687
Meteorology, science of the weather, 2504
Meteors, circle round the sun, 152

INDEX

- Meteors**, what they are, 2499
Methodist Church, founded by Wesley, 1996
Methyl-alcohol, is used in making methylated spirits, 1871
Methylated spirit, how it is made, 1871
Metre, a standard of measure, 3670
Metric system, what is the advantage of the, 5641
 what it is, 3670
Metropolitan Museum of Art, founded, 4149
Metz, battle of, 2580
Meunier, Constantin, as a sculptor, 4162
 his statue of miner resting, 4169
Meuse River, in Netherlands, 3455
Mexico, added to Spain's dominions, 3356
 arms, picture, 4381
 became independent, 3360
 conquest of, 260
 flag, 4388
 flag, picture in colour, 1640
 history, 4381
 horses introduced into, 269
 left to Spanish, 4036
 legends of, 5231
 Mexico and Central America, map, 4383
 products, 4386
 railway, picture, 4387
 territory given over by, 3535, 3536
 war with United States, 3535, 4388
Mexico, city, building of, 4383
 cathedral, picture, 4391
Mexico, Gulf of, its shape, 4381
Meyerbeer, Giacomo, composer, 3252
Mica, in Canada, 5600
Mica-schist, a rock, 4246, 5198
Michael, tsar of Russia, 3628
Michael Angelo, and Vittoria Colonna, picture, 4947
 chief sculptures, 4161
 helped to design St. Peter's Cathedral, 3020
 his ceiling of Sistine Chapel, 4949, 4951
 his picture, The Holy Family, 4589
 his statue, Lorenzo de Medici, 4169, 5025
 his statue of Moses, 4947
 message to Paul VI., 4951
 opinion of Donatello's St. George, 2788
 portrait, 4945
 portrait-statue of, 4848
 story of his life, 4950
 was born in Florence, 2790
 work as a painter, 4586
 working on picture of Last Judgment, picture, 4953
Michigan, admitted, 1828, 3535
Michigan, Lake, 212
Mickle, William Julius: see Poetry Index
Microbes, are of different kinds, 903
 can stop living and start again, 4052
 have no smaller microbes on them, 4743
 help to make cream, 4340
 how they flourish in milk, 2795
 how they increase, 3383
 live in the soil, 3342
 one of the earliest forms of life, 170
 picture, 785
 supply nitrogen to plants, 3340
 what they are and do, 781
 wood is rotted by, 1988
Micronesia, part of Australasia, 1466
Microscope, cannot show the atoms in wood, 4342
 familiar things under, picture, 2321
 how to use, 2974
 little girl looking through, picture, 2319
 makes things look larger, 781
 picture of, 2320
 showing names of its parts, picture, 2974
 story of, 2319
Midas, king of Thrace, 556
Midday, where the sun is at, 78
Midge, a kind of mosquito, 3146
Midshipman Easy, the story of the book, with picture, 2200
Midsummer Night's Dream, A, one of Shakespeare's plays, with picture, 312, 313
Midway Island, note about, 2190
Mignonette, an annual, 233
 picture, 4419
 wild, 4424
Migration, of birds, 511, 2210
Mikado, the emperor of Japan, 363
Milan, an historic city, 3016
Milan, a wealthy manufacturing town, 3024
Milan Cathedral, is built of marble, 618
 one of the wonders of the world, 3016
 pictures, 619, 1179
 the brave cardinal of Milan, 1179
Mildenhall, Sir John, his visit to Akbar, picture, 1698
Mildew, how to cure plants, 3726
Miles, Alfred H.: see Poetry Index
Miles, Nelson A., captures Porto Rico, 2188
Milford Sound, New Zealand, picture, 1459
Milk, contains much water, 1170
 either acid or alkaline, 1799
 how a cow makes milk, 1573
 its specific gravity, 3816, 3817
 law of watering milk, 3817
 microbes in, 903
 not used in China, 376
 salts of iron in, 2698
 sour milk, 912
 used for invisible writing, 1287
 what it is, and its value as food, 2791
 why a crust forms on boiled milk, 4547
 why cream forms on it, 4340
 why does it turn sour? 5574
 why it boils over, 4231
 why thunder turns it sour, 3977
Milk-thistle, what it is like, 5271
Milkweed, picture, 5037
 swamp, 5038
Milkwort, picture, 5191
 sea, description, 5190
Milky Way, its movement, 2718
 pictures, 2609, 2715
 what it is, 1863, 2612
Mill, brave maid of the mill, story, 2734
 corn mill, picture, 1149
 driven by steam, 1149
Mill, John Stuart, his laws on logic, 5758
 his writings, picture, 5758
 life and aims, 4102, 5758; portrait, 4097
Millais, Sir J. E., his picture, Mercy, 2071
 his picture, Sir Walter Raleigh as a boy, 843;
 figure from picture, 5025
 his sketch of Thackeray, 2312
Miller, Emily, Joaquin, Thomas William: see Poetry Index
Miller, W., interest in steamship, 2470
Miller, and pets, story, with picture, 3847
 puzzle of the Miller's sacks, with picture, 2139, 2260
Millet, used for bread, 1144
Millimetre, a measure, 3671
Million, what it means, 1932
Millipede, life-story, 3296
 picture, 3297
Mills, Clark, sculpture of, 4844
Mills, Mrs., helped the Earl of Nithsdale to escape, 2203
Milne, Prof. John, on earthquakes, 3232
Milton, John, and Andrew Marvell, picture, 3337
 and his friends, 6095
 dictating Paradise Lost, picture, 3337
 how many words he used, 2330
 L'Allegro and Il Penseroso, poems, 1557
 one of Cromwell's ministers, 1025, 1892
 pictures, the country home of, 6097, 6099, 6101
 playing the organ, picture, 3335
 poems, quotations from, 6095; see also Poetry Index
 portrait, 1994, 1999
 story of his life, 3334
 what he said about blindness, 153
 wrote Let us with a gladsome mind, 1995
Milvian Bridge, battle of, 534
Minas Geraes, its people, 4568
Mind, how different people think, 4939
 how it is built up, 5026
 how we must feed the mind, 2313
 how we use it, 5763
 the master of the body, 4731
Miner, how the miner works, with picture, 801
 miner resting, statue, 4169
 safety lamp: see Safety lamp
Mineralogy, a help to geology, 2883
Mineral oil, what it is, 3238

- Minerals**, abundant in Russia, 3746
Miner caterpillar, what it is, 2989
Minerva, a goddess, 1683
Minerva Church, Rome, frescoes of, 4950
Mines, coal-mines: see Coal-mines
 gold, with pictures, 5297
 importance of ventilation in, 4343
 lit by electricity, 4319
 of Canada, 5601
Ming dynasty, of China, 112
Ministers, the four wise ministers, story, and picture in colour, 4927
Mink, description, 4820
Minnesota, admitted, 1836, 3536
Minnow, fish, 2681; picture, 2679
Minotaur, story unravelled, 5122
Minster, Isle of Thanet, 428
Minstrel Queen of Spain, story, 1432
Minstrels, songs written for, 2954-5
Mint, plant, a useful herb, 3176
Mint, the, built by Smirke, 1164
 cannot pay the National Debt, 2621
 picture, 3618
Minto, Earl of, governor-general, 1248
Minute Man (the), picture of, 4845
 statue, 4846
Mirabeau, Honoré, Comte de, 4054
 portrait, 4053
Mirage, pictures, 5018, 6033, 6037
 what it is, 3090
Miriam, in the Marble Faun, 5433
Mirrors, are silvered with mercury, 1294
 how they reflect things not in front of them, 5167
 the mysterious portrait, story, with picture, 5161
 why faces looked crooked in, 1572
Missel-thrush, brings up other birds, 2058
 egg, picture, 1744
Missionaries, early missionaries, 4707
 hated in China, 114
 in Hawaii, 2181
 Jesuit in New France, 880
Missionary Ridge, battle of, 2018
Mississippi, admitted, 1824, 3534
 secedes, 2010, 3536
Mississippi River, claims to valley of, 882
 description of land and life along the shore, 6113
 dredged, 3537
 exploration of, 260, 264
 its course, 4381
 its length, 4498
 its levees, 5985
 two views of, pictures, 6115
Missouri, admitted, 1826, 3534
 a slave state, 2010
 prevented from seceding, 2012
Missouri Compromise, did not settle slavery question, 2008, 2009
 what it was, 1825, 1826
Mist, in valley of Medway, picture, 3545
 what it is made of, 1644
 what makes mist at night, 3545
Mistakes, that are made every day, 5524
Mistletoe, grows on wild apple-tree, 3445
 lives on other plants, 3830
Mistletoe Bough, The, song, picture, 3739
Mitchell's Fold, Shropshire, legend of, 2744
Mites, belong to same class as spiders, 3304
 picture, 3297
Miterwort, description, 2840
 false, description, 2840
Mitford, Mary, life, 2595; with portrait, 2593
 poems: see Poetry Index
Mithridates, the Great, Parthian king, 5065
Mitre Peak, Milford Sound, picture, 1459
Mixed nerve, controls motion, 2627
Mixture, differs from a compound, 1040, 1665
 what a mixture is, 937
Moa, a bird, 47, 1424; picture, 1425
Mobile, battle of, 2019
Mobile liquids, what they are, 2505
Mocking-bird, 2060; picture, 2055
Mocking-thrush, mocking-bird, 2060
Modelling, a boat, bell, and match-stand, 6061
 in sand, 3821
 three things for, 5917
Models, glass models of objects of natural history, 4902
Modeltown, chapel, with pictures, 1502
Modeltown, church, with pictures, 428
 farm, with pictures, 1199, 1282, 1351
 finishing Modeltown, with pictures, 4673
 fire-station, with pictures, 2352
 gasworks, with pictures, 2687
 hotel and restaurant, with pictures, 2035
 how to make a town, 333
 parsonage, with pictures, 1611
 preparing for Modeltown, with pictures, 445, 446, 447
 shop, with pictures, 570, 571, 720, 721
 the cottages, with pictures, 447, 448
 villa, with pictures, 832, 833
Moeritherium's skull, picture, 3679
Moffatt, Robert, his life, 282
Mogul Empire, founded by Babar, 1702
Moguls, agree to government of Britain in Bengal, 4037
 conquered India, 1548, 1550
 disappearance of, in India, 4037
 emperors of India, 1706
 Great Mogul, 1702
 permit English to set up "factory," 4036
Mohacs, battle, won by the Turks, 2854
Mohammed, dictating the Koran, picture, 2999
 did not write Koran, 5524
 founded Islamism, 1585, 3876
 his birthplace, picture, 3001
 his faith, 3152; with portrait, 2995
 his life and teachings, 3002, 5889
 wrote down his dreams, 5098
Mohammed II., 3156; portrait, 3149
Mohammed IV., 3629
Mohammed Ali, rule in Egypt, 4258
Mohammedanism, arose in Arabia, 3874
 caused war, 3152
 religion of Central Asia, 3934
 what it teaches, 3002
Mohammedans, conquered Egypt, 4256
 conquered Persia, 3878, 5066
 followers of Mohammed, 1550, 1585
 how their conquests spread, 3876
 invaded India, 1700
 invaded Spain and France, 3353
 Mohammedan at prayers, picture, 1701
 their sacred book, 5098
 thousands in prayer, picture, 5891
Moissan, Henri, has shown there is a low-temperature chemistry, 4051
Moisture, how to keep ground moist, 3514
Molars, back teeth, 2099
Moldavia, an independent kingdom, 3150
 under Russian and Turkish rule, 3158
 part of Roumania, 3220
Mole, its home, 5412, 5414, with picture, 673, 674
Mole cricket, picture in colour, face 3140
Molecules, what they are, 1039, 1666, 4365
Molière, Jean P. de, dining with Louis XIV., picture, 5216
 life and writings, 5220
Molinia, purple, with picture, 1312
Mollusc, a soft-bodied animal, 2583
 picture, 2589
 two famous molluscs, 2587
Moloch, lizard, with picture, 1220, 1226
Molokai, islands where lepers are confined, 2182
Moltke, General, at Versailles, picture, 2581
 defeated Austrians, 2579
Mombasa, railway to Uganda, 4260
Mompesson, William and Catherine, fought the Plague, 625
Mona, and the forsaken merman, story, with picture, 958, 959
Mona Lisa, picture, 4589
Monals, pheasants, 1515
Monasteries, destroyed, 844
Monk, General, fought against the Dutch, 3463
 portrait, 519
 soldier of the Commonwealth, 1027
Monck, Lord, as governor-general, 1244, 1245
Moncton, manufacturing centre, 5604
Monday, how it got its name, 83
Money, beaver-skin as a substitute for, 5150
 Confederate, 2019
 decimal system adopted, 3533
 how it is made, with pictures, 3618
 how the conjurer makes his money, 1508
 things of no value used as money, 4342
 what it is, 3617

Mongolia, history, 3933; with map, 3933
 province of China, 105
 where it is, 3932
Mongolian Plateau, 3932
Mongols, driven out of China, 112
 history, 3933
 invaded Japan, 364
 invaded Russia, 3624
 invaded south-west Asia, 3878
 Mongol gentleman, picture, 3939
Mongoose, with picture, 137, 141
Monitor, lizard, 1218; picture, 1225
Monitor, the, and Merrimac, 2015
 built, 2014
Monk, George: see Monck, General
Monkey, different kinds, 606
 helps in the study of disease, 3077
 how captured, 6150
 its love for its young, 5134
 pictures, 48, 605
 prove the existence of a continent, 3005
 sacred in India, 605, 606
 story of, 6152
 the sounds they make, 1269
Monkey-nut, or pea-nut, 1966
Monkeys, Hundred Thousand Monkeys, a
 story, 5655
Monkey's Face, rock, with picture, 1059
Monks, at Westminster, story, 4639
 who were famous, 3981
Monkshood, 5270; picture, 5276
Mono-rail system, Brussels railway, picture,
 91
 gyroscope train, pictures, 90
 how trains run, 89
 Kearney system, picture, 91
 toy train and boy, picture, 89
 Wupper Valley railway, picture, 91
Monotype machine, 894
Monroe, James, administration, 3534
 as president, 1825, 1826
 picture, 3532
Monroe Doctrine, application of, to Cuba, 3538
 came into existence, 3534
Monserat, limes grown at, 1877
Monsoons, Indian winds, 1548
Monsters, giant monsters of the sea, pictures,
 1083
 great monsters of the past, picture, 50
 how we find remains, 46, 48
Montaigne, Michel Eyquem de, life and writ-
 ings, 5220, portrait, 5217
Montana, admitted, 3537
Montana, in Othello, 474
Montbretia, plant, picture, 5280
Montcalm, Marquis de, at Fort William Henry,
 540, 884, 885
 at Quebec, and death, 540, 885, 1094
Mont Cenis tunnel, 6203
Monteagle, Lord, and Gunpowder Plot, 1792
Monte Cristo, Count of, story of the book,
 4325, 4407
Montefiore, Sir Moses, philanthropist, 6223
Montenegro, flag, picture in colour,
 history, 3224
 national costume, picture, 3225
Monterey, battle of, 1832
Montevideo, picture, 4573
Montezuma, emperor of Mexico, 4382, 4383
Montfort, John de, story of his wife, 2478
Montfort, Simon de, founded House of Com-
 mons, 2067
 led barons, 600
Montgomery, James: see Poetry Index
Montgomery, Richard, killed at Montreal, 743,
 984
Montgomery, Ala., 5985
 the capitol, picture, 6215
Months, getting longer, 37, 2281
 how they are made, 2220
 how they got their names, 4515
Monthyon, Baron de, lawyer, 1064
Monticello, picture of, 789
Montreal, appearance of, 5428, 6184
 captured, 540
 how it was founded, 218, 536
 how it was saved from the Indians, 219
 Liverpool of Canada, 212
 views in, pictures, 213, 1245, 1324, 1752, 1753, 2246,
 2247, 2778, 5612, 6187

Montrose, Marquis of, fought for Charles I.,
 1896; portrait, 1896
Mont Royal, discovered and named, 536
Monts, Sieur de, holds fur monopoly in Can-
 ada, 537
Monuments, a talk about them, 5003
 Washington (The) Monument, 1714
 with pictures on them, 5098
Moody, Dwight Lyman, story of his work,
 with picture, 1998, 1999
Moon, a dead planet, 61, 2222
 affects rivers, 3091
 called Luna by the ancients, 2234
 changes of temperature, 4321
 circles round the earth, 147
 distance from the earth, 2219
 getting farther away from earth, 2281
 harmless to us in our sleep, 3378
 has no inhabitants, 910
 heat inside, 3237
 hides the sun, 2086
 how it was formed, 311
 is quite dry, 3072
 its eclipse, 1862, 3431
 its other side, 2282
 its path, 2219
 lamp of night, 2219
 makes the tides, 33, 361, 2280
 man in the moon, legend, 4277
 may have tides itself, 2282
 pulls the earth, 34
 rate of travel, 2220
 size compared to our earth, 1367
 spins upon itself, 2281
 there are many moons, 147
 what its marks are, 3031
 what makes the halo around, 5790
 what the earth would look like from the
 moon, 4345
 where its atmosphere has gone, 3690
 who is the man in the moon, 6163
 why it appears to travel with us, 2672
 why it grows brighter as sun sets, 3690
 why we can see its whole circle when it is
 not shining, 4116
 will probably return to the earth, 4342

Pictures of Moon

blotting out the sun, 1862
 circles round the earth, 147
 eclipse, 1865
 looking at it through a telescope, 2221
 moons Galileo saw, 147
 moon's surface, 2223
 picture-map of the moon, 2222
 with the earth in space, 149
 volcano called Plato, 2223
Moore, Clement C.: see Poetry Index
Moore, Sir John, great soldier, 701, 3360
Moore, Tom, wrote Irish songs, 3742
 poems: see Poetry Index
 portrait, 3737
Moore's Creek, battle of, 986
Moor-hen: see Water-hen
Mooring, of a ship, 4565
Moors, invaded Italy, 3014
 invaded Spain and France, 2064, 3353, 3356
 surrendering Granada, picture, 3355
Moose Jaw, Canadian town, 5368
Moosewood: see Maple, striped
Moran, John, subject of yellow fever experi-
 ment, 3201
Moran, Thomas, and the Rocky Mts., 4149
Morava River, in Servia, 3222
Moravia, wool manufacture, 2858
Moraviantown, battle of, 746
Mordaunt, Sir Charles, saw eagles attack deer,
 1842
Mordella beetle, its wonderful eye, 3260
More, Sir Thomas, condemned to death, pic-
 ture, 5069
 died for his religion, 5037
 friendship with Erasmus, 3156
 his daughter's love for him, story, with pic-
 ture, 1298, 1299
 statesman, 844
Morea, The, French troops landed, 3220
 part of Greece, 3150

INDEX

- Moreau, J. Victor**, General, routed the Austrians, 1035
won battle of Hohenlinden, 4360
- Morel**, unlike other fungi, 4752
- Morella**, named after Morelos, 4388
- Morelos**, rebelled against Spaniards, 4386
- Morgan, Daniel**, at Cowpens, 992
during Revolution, 984, 988
portrait, 985
- Morgan, Mrs.**, helped the earl of Nithsdale to escape, 2203
- Morgarten**, battle of, 2966
- Morley, Lord**, on Rousseau, 4097
- Mormonism** in United States, 1833
- Morocco**, flag of Morocco, picture in colour, 1640
its unsettled state, 4261
lonely old woman, story, 5316
- Moros**, origin of, 2184
- Morris, William**, poems: see Poetry Index
taught men to strive for beauty, 3704
- Morris dances**, with pictures, 2765
- Morrison, Charles**, his ideas about the telegraph, 4314
- Morse, Samuel**, invented telegraph, 3525
life, as inventor, 2668
pictures, 2437, 4315
what he did for telegraphy, 2474, 4316
- Morse code**, what it is, with picture, 3521
- Mortar**, holds bricks together, 617
- Mosaic work**, came into use, 4585
how it is done, 1991
picture and chapel in mosaic, pictures, 1991
Roman factory, 1990
- Moscow**, burnt by the Russians, 3632
burnt by the Tartars, 3626
how Napoleon marched to Moscow, 2276
how the French reached Moscow, story, 2094
invaded by the Poles, 3628
picture, 3744
plague outbreak, 3631
what it is like, 3748
- Moses**, a slave from his birth, 2910
as a doctor, 4196
statue by Michael Angelo, with picture, 4952, 4947
where he played as a boy, 5818; picture, 5820
- Moskva River**, in Russia, 3748
- Moslems**, Mohammedans, 1585, 3001
- Mosquito**, causes malaria, 5641, 5850
how it causes fever and malaria, 1386, 1789
its life-story, 3146; with picture, 3143
part played in yellow fever, 3201
the harm it does, 3145
- Moss-campion**, description, 4834
picture, 4837
- Moss insect**, looks like a twig, 3415
- Moth**, British species, picture in colour, face 2982
feeler, through microscope, picture, 2326
head, through microscope, picture, 2323
hiding from foes, picture, 3413
how to tell a moth, 2985
kept away by camphor, 4121
not kept from clothes by odours, 5524
only their maggots eat clothes, 5524
various kinds, 2983
why it flies round a candle, 1986
- Mother and her child**, picture, 763
- Mother Carey's chicken**, name for stormy petrel, 1626
- Mother-of-pearl**, lining of oyster shell, 171
- "Mother of the Presidents,"** Virginia called, 1398
- Moti Masjid**, Pearl mosque in Agra, 1550
- Motion**, cannon-ball bouncing out of the sea, 5852
different kinds of, 3468
everything moves, 64, 2507
first law of motion, 1577, 2879
horses on a roundabout, 777
how fast a person walks in a train, 777
how forces act on a moving body, 3674
how to measure time and space, 3669
how we recognise movement, 77, 78, 1578, 3468
it cannot be weighed, 4048
molar and molecular motion, 4365
movement changes matter, 3465
Newton's laws, 3469, 4744
perpetual motion, 3550
unconscious, 5578
- Motion**, why things move, 3547
- Motion Pictures**, see moving pictures, 5083
- Motor-cars**, perfecting of, 2670
what makes them move, with pictures, 1771
why they have numbers, 1576
- Motor nerve**, moves the muscles, 2628
- Motor race**, fame, with picture, 4242
- Mouflon**, sheep, with picture, 377, 378
- Mould**, what it is, 3830
- Moulding**, of a picture frame, 1923
- Mound birds**, build mounds, 1520
- Mountain ash**, how its fruit is made up, 4110
what it is like, with picture, 3448
- Mountain clematis**, 5270
- Mountain Creek**, bridge, with picture, 29
- Mountain finch**, with picture, 2058, 2059
See also Puma
- Mountain lion**, 5730
- Mountain plants**, for rock gardens, 1928
- Mountains**, Alps, 5669
character and peaks of Canadian, 5607
formation of ranges, picture, 3230
how formed, 404, 2881, 3227, 3859
how to measure their height, 776
in the moon, 2222
may form islands, 3004
measurement by barometer, with picture, 3945, 3946
mountain top above clouds, picture, 3693
of the United Kingdom, 5017
the highest in the eastern part of the United States, 10
- Mountains**, White, scene pictured, 18
why it is colder on the top, 776
why snow does not increase height, 3859
- Mountains of Heaven**, 3931
- Mount Erebus**, volcano, 5051
- Mount McKinley**, highest mountain in North America, 2178
- Mountstephen, Lord**: see Stephen, Sir George
- Mount Vernon**, picture, 789
- Mouse**, different kinds of mice, 770
how cats keep mice down, 45
mice who wished to bell the cat, story, with picture, 463
picture, 771
the convict's friend, story, 499
town and country mouse, fable, 3124
- Mouth**, eating with the, 2205
how the teeth are formed, 2097
- Moving Pictures**, how made, with pictures, 5083,
- Mozart, Maria Anna**, went on a musical tour with her brother, 3248
- Mozart, W. A.**, his life-story, 3248
pictures, 3243, 3247
- Much Ado about Nothing**, story of the play, 551
- Muchelney**, legend of, 3312
- Mucius, Caius**, how he braved death, 3884
- Mucous membrane**, lines the mouth, 2205
lines the stomach, 2344
- Mucus**, produced in the mouth, 2205
- Mud**, how it is formed, 2886
- Mud-fish**, 2446, 2448; summer sleep, 6300; picture, 2447
- Mud huts**, in South Africa, picture, 1767
- Mud-skipper**, fish, with picture, 210
- Muir, Alexander**: see Poetry Index
- Mulberry-tree**, picture, 1807
- Mules**, carry loads up mountains, 271
intelligence of, 5330
picture, 271
production of in U. S., 2658
tramcars drawn by mules, 272
what they are like, 272
- Mülhausen**, town in Germany, 2754
- Müller, J.**, law about nerves, 2798
- Müller, Max**, on English language, 2330
what he said about the alphabet, 3390
- Mulock, Dinah Maria**, Mrs. Craik, 2599
- story**, John Halifax, Gentleman, with pictures, 3923
See also Poetry Index
- Mummies**, of Egypt, 4780
how covered, 6167
- Munich**, capital of Bavaria, 2576, 2754
- Munkaasy, Michael**, his picture of Milton dictating Paradise Lost, 3337
- Murcia**, province of Spain, 3353

INDEX

Murdock, William, his engine, picture, 618
 invented coal-gas, 610, 656
Murena, sea-eel, 2451
 pictures, 2449, face 200, in colour
Murfree, Mary Noailles, life, 2049
Murfreesborough, battle of, 2016
Murillo, a great artist, 3358, 3361
Murimuth, Adam, kept a chronicle of English history, 760
Murray, General, in Canada, 742
Murray Bay, appearance of town, 5428
Murray River, in Australia, 1362
Muschenbroek, discovered Leyden jar, 2115
Muscle, a wonderful machine, 4367
 muscles and their masters, 2625
 pictures, 2624, 2625
Muscovites, Russians, 3626
Muses, goddesses, 1273
Museum, boy's home muscum, 3613
Museum of Fine Arts, Boston, founded, 4149
Museum of Natural History, description of, with pictures, 4901
 picture, 5182
Musgrave family, of Edenhall, 3166
Mushroom, has no green colour, 223
 meaning of word; history and edible and poisonous varieties, 4751
Music, adding of black notes on the piano, 4862
 addresses of the fairies, with picture, 1692
 beautiful land of sound, 3133
 different sounds of different instruments, 4863, 4864
 fairies in the tulips, 1450
 fairies inside the shells, 1691
 fairies of music and their names and homes, with pictures, 250, 251, 252
 games with the piano fairies, 491, 3373, 3426, 3427
 great composers, 3243
 homes of the little goblins, 2413
 how a good singer uses his voice, 4916
 how a musician thinks, 4944
 how to mend torn music, 4249
 Jenny Lind, 5495
 king semibreve and his court, 1933
 laws of music, 4859
 map the fairies made, with picture, 2892, 2893
 music and noise, 4757
 overtones or harmonics, 2620, 4864, 4913
 pitch of musical notes, 4582, 4769
 procession in Treble Road, 971
 relation between notes, 4860
 relation to arithmetic, 4861
 roads the fairies travel on, 731
 scales, 4862
 sleepy arm game of the fairies, 3291
 strange caps that the fairies wear, 2173
 the fairy meeting on Bass Road, 1211
 the goblins on left side of the fairies, 2652
 use of discords, 4918
 what harmony is, 2620
 what music is, 509
 what out of tune means, 4862
 why do some notes agree and others make a discord, 5686
 wonderful land of sound, 250
See also Harmony
Musical glasses, how to use them, with picture, 4461
Musical instruments, the first kinds, 1015
 of Canadian Indians, 2773
Musk, how to grow it, 1074, 1350
 its strong scent, 1571
Muskoka Lakes, Canada, description of, 6186
Musk-ox, a strange animal, 378, 3410
 picture, 377
Musk-rat, description, 4818
 how hunted, with picture, 2732
Mussel, its life-story, 2588
 pictures, 2589, 2590
 where it grows, with picture, 3772
Mussulmans, Mohammedans, 1550
Mustard, why it burns the tongue, 2459
Mycale, battle of, 5129
Mycene, Gate of Lions, 5004
 palace unearthed, 5122
 picture, 5008
Myse, battle of, 5262
Myllar, Andrew, printer, 3673

Myloodon, animal like the great sloth, 49
Myna, bird that speaks, 1747
Myron, Greek sculptor, 4160
Myrtle, bog, picture, 5037
Mysore, state of, defied the British, 1706
Mystery-writing, various kinds, 4137

N

Nabonidas, king of Babylon, 4984, 5058
Nabopolassar, founded new Babylonian empire, 4983, 5067
 joined the Medes, 4982
Nagasaki, port of Japan, 366, 370
Nag's Head, rock, and picture, 1059
Naihe, public orator of Hawaii, 2491
Nails, straightening bent nails, 338
 to hammer in, 5523
Nails, how the white marks are caused, 4232
 pictures, 1961
 what our nails are, 156, 1961, 1986
Nairne, Caroline Oliphant, Baroness, song-writer, and portrait, 3742
Name pictures, how to make them, 4138
Names, buried names puzzle, 4351, 4458
 English place names, 427
 hidden names of plants, picture puzzle, 4999, 5114
 how the countries got their, 5955
 why plants have Latin names, 4285
 why we have names, 678, 2234
Nana Sahib, Indian rebel leader, 1706
Nancy, cotton and metal work, 2396
Nanking, town on Yang-tse river, 115
 treaty of, 112
Nanking Mountains, in south China, 106
Nansen, Dr., attempt to reach the North Pole, 4726
 crossed Greenland, 4724
 his Eskimo dogs, 6271
 meeting with Jackson, 4726
 portrait, 4725
Nan-Shan Mountains, in China, 110
Nantes, Edict of, 2070
Napier, David, his steamboat, 2472
Naples, 3020, 3024; picture, 3023
Naples museum, art treasures from Pompei, 6142
Napo, Rio, leads to the Amazon, 4505
Napoleon I., attack on Moscow, 2094
 campaign in Egypt and Europe, 2274, 4258
 conquered Lombardy, 3358
 crossed the Alps, 2876
 defeated at Waterloo, 1095, 3464
 England's fear of invasion, 2710
 formed the Ligurian Republic, 3016
 fought with the Russians, 3631
 gave Tyrol to King of Bavaria, 122
 his life, 4355
 his overthrow at Waterloo, with pictures, 5362
 his war emblem, 1640
 his wonderful escape, 4227
 how he came from Elba, story, 812
 how he conquered Europe, 2575
 how he rode from Waterloo, story, 3504
 invaded Italy, 3020
 invaded Switzerland, 2967
 made his brothers kings, 2276
 Mallet's rebellion, 330
 occupied Spain, 3360
 ordered Arc de Triomphe to be built, 5005
 supported by Denmark, 3596
 the bird that he set free, story, 1298
 tomb of, with picture, 5337
 took the bronze horses to Paris, 3018
 would not believe in steam power, 2471

Pictures of Napoleon

 army cheering the emperor, 2273
 as a boy, 4358
 at a cottage hearth, 1489
 at Arcola, 4361
 at school at Brienne, in colour, 4356
 at the battle of Wagram, 2531
 escaping after Waterloo, 3503
 in St. Helena, 4363
 Napoleon and Robert Fulton, 2471

Pictures of Napoleon

Napoleon's son, King of Rome, 331
 portraits, 2267, 4355
 retreat from Moscow, 2275
 riding through Moscow, 3631
 triumph over hostile troops, 813
 Napoleon and Robert Fulton, 2471
Napoleon III., defeated the Austrians, 2530
 meeting Bismarck, picture, 2577
 nephew of Napoleon I., 2277
Narcissus, different kinds, 5272
 grown in bowls, 1816
 in gardens, 5272
Nares, Captain, attempt to reach the North Pole, and portrait, 4724, 4725
Narses, slave, story of his life, 2911
Narwhal, whale with a long horn, 1088
Naseby, battle of, 1888, 1895
Nashville, Tenn., 5986; picture, 5992
Nasturtium, an annual, 233, 927
 how it guards its nectar, 3736
 its seed-pod, 579
Natal, country in South Africa, 1768
 people of Natal, picture, 1765
Nation, our lives and the nation, 5281
 are strongest happiest, 5793
National Assembly of France, 2268
National Transcontinental Railway, history of, 2262
Natural History: see also Museum of Natural History

NATURE

Child's Book of Nature

The following are the actual headings of the chapters in this section. The separate entries appear below and in their proper places in the index.

American trees in summer, 5621
 American trees in winter, 5437
 animals living in the sea, 1081
 animals that feed and clothe us, 375
 animals that fly and burrow, 765
 animals that puzzle us, 859
 animals that serve man, 269
 animals that work for Nature, 131
 animals with wonderful coats, 3407
 big fish of sea and river, 2443
 birds that cannot fly, 1423
 birds that serve us, 1513
 birds that swim and climb, 1951
 butterflies and moths, 2983
 day in a lion's life, 5827
 everything a part of Nature, 3240
 familiar bird friends, 2209
 fish of the rivers and lakes, 2675
 flowers of British authors, 4609
 flowers of rocky places, 4833
 flowers of the garden, 5269
 flowers of the marshes, 5031
 flowers of the seaside, 5185
 flowers of the stream, 4961
 homes not made with hands, 5411
 how a flower is born, 3731
 how animals talk to each other, 5323
 how plants travel, 3827
 little known British flowers, 4417
 mushrooms, edible and poisonous, 4751
 Nature's great family, 3675
 Nature's little workmen, 665
 Nature's winged huntsmen, 1839
 Nature's wonderful family, 45
 our animal friends, 499
 plants of two worlds, 4285
 poetry of Nature, 2192
 reptiles, the oldest animals, 1217
 roadside plants and weeds, 4185
 sea animals in armour, 2583
 smaller fishes of the sea, 201
 some insect foes of man, 3139
 some insect friends of man, 3255
 some striking American shrubs, 4487
 some very strange beasts, 995
 the animals most like men, 601
 the bees and wasps, 2815
 the birds of beauty, 1737
 the birds of the ocean, 1625
 the families of plants, 4109
 the great snake family, 1373

Nature, the habits of flowers, 3949
 the homes of the birds, pictures, 5777
 the hunters of the wild, 6147
 the life of young animals, 5477
 the singing birds, 2051
 the story of the horse, 6039
 the winter sleep of animals, pictures, 295
 the wonder of a piece of silk, 1805
 the world in the waters, 2335
 the zoo that never was, pictures, 5925
 things that creep and crawl, 3265
 unknown animals, 5567
 when man meets the beast, 5723
 why so much of Nature is green, 2875
Naucrates, famous Greek city, 4790
Nauvoo, 1834
Navaretta, battle of, 2806
Navarino Bay, battle of, 3220
Navigator Islands: see Samoa
Navy, enlarged, 3537
 British, its equipment, 5855
 Marine Commission appointed by Continental Congress, beginning of American navy, 2897
 reconstruction of, 2900
 the U. S. Navy Department, 1596
 victories in the several American wars, 2897-2902
Nawab, title of a ruler in Bengal, 1704
Neale, John Mason, wrote hymns, 1997
Neap tides, their cause, 2280
Nebo, Babylonian god, 4983
Nebraska, admitted, 3537
 made into a territory, 3536
 organised as territory, 2009
Nebuchadnezzar, his madness, picture, 4979
 story of his reign, 4983
Nebulae, pictures, 2863, 2865
 what is known of them, 2861
 what they are, 307, 1948
Necker, Madame, her life, 4682
Necklace, for a doll, 2033
Nectar, how the bee takes it, 2826
Needle, attached to tuning-fork, picture, 4757
 how to use it, 456
 the eye magnified, picture, 2325
 weighs the same when magnetised, 3761
Needle, mountain, picture, 5017
Needle-case, butterfly needle-book, and picture, 4998
 how to make, and picture, 2871, 2872
Negative, in photography, 39
Negative electricity, discovery, 2115
Negritos, in Philippines, 2182, 2187
Negroes, 1825
 a negro basket maker, picture, 6146
 coloured man at the North Pole, 5213
 coloured man, J. B. Hill, stops a runaway, 3108
 given right to vote, 2024, 3536
 how they went to America, 1766
 man and his negro servant, fable, and picture, 4805
 negro melodies, 2954
See also Slavery
Negro River, joins the Manaos, 4567
Nehemiah, cupbearer to Artaxerxes, 5064, 6220
Nelson, Dr. Wolfred, banished, 1239
Nelson, Horatio, about to join his ship, picture, 4357
 as a midshipman, picture, 4360
 battle of the Nile, 2274
 blockaded Malta, 1876
 buried at St. Paul's, 1095
 dying, picture, 4359
 his life, 4358
 his words before Trafalgar, 3440
 kind of ships he had, 74
 landing at Yarmouth, picture, 4359
 last words of Admiral, 5618
 portrait, 4355
 won Trafalgar, 3360
Nelson, a province of New Zealand, 1464
Nelson's Column, 5004; picture, 5011
Neon, an element in argon, 1295
 made from radium, 1419
Nepal, war with the British, 1706
Nepenthes, plant, with pictures, 3541
Neptune, distance from the sun, 150, 151
 the outermost planet, 1944
 what is known about it, 2429
Nerbudda River, divides India, 1546

INDEX

- Nereides and Cassiopeia**, 3314
Nero, emperor of Rome, 5306
 began the Corinth Canal, 5014
 burning of Rome, 2263
 his cruelty, 4946
 persecuted the Christians, 626, 2911
 portrait, 530
 ruled after Claudius, 530
Nerva, emperor of Rome, 531
Nerve-cells, pictures, 1103, 3561
 what they are, 1446
Nerve-current, its action, 3872
Nerves, forest of nerves within us, 3561
 how they can avoid pain, 4343
 how they control the muscles, 2627
 how they govern the heart, 1583
 nerves of the body, picture, 3565
 what they are, 1102
Nervousness, effect on beat of heart, 5016
Nervous system, controls movement, 2454
 what it is, 3563
Nestor, a Greek, 67
Netherlands, added to German states, 2527
 freedom from the Spanish yoke, 3353
 heroes of the Netherlands, story, 5171
 map, 3463
 religious persecution, 3356
Nettle, pictures, 2321, 3831
 stinging nettle, 780
Neuchâtel, famous for watches, 2963
Neuchâtel Lake, in Switzerland, 2960
Neutral reaction, what it is, 1799
Nevada, admitted, 3536
Nevada Falls, in Yosemite valley, 322
Neva River, 3630
Nevis, exports sugar, 1877
Nevitte, Dorothy Eliza: see Southworth, Mrs.
Nevski Prospect, Russian street, 3748; picture, 3749
New Amsterdam, colony of, 520, 521
Newark (Niagara), assembly of Upper Canada
 first met there, 745
New Bern, 523
Newbold, Charles, as inventor, 2668
Newbolt, Henry: see Poetry Index
New Brunswick, becomes a province, 745
 education in, 5234
 description of, 5604
 province of Canada, 216, 535
 scenery, picture, 4240
New Caledonia, house, picture, 1465
New Carthage, city of Spain, 414
 colony of the Phœnicians, 5122
New Castile, province of Spain, 3353
Newcombe, Professor, on geography and
 Greenwich Observatory, 1664
 what he said about nebulae, 2861
Newcomen, Thomas, made one of the first
 steam-engines, 610
Newcomes, The, the story of the book, and
 pictures, 3603
New England, centre of shoemaking industry,
 3101
 colonised, 4036
 named by Capt. John Smith, 516, 539
 proposes to leave Union, 1400
New Forest in Hampshire, 436
 the fairy of the New Forest, legend, 3648
Newfoundland, Beothuks, first inhabitants, 6279
 chief occupation of people, 6279
 discovered, 535, 843
 fish industry, picture, 4099
 fishing banks visited by French, 537
 has great fisheries, 216
 industries of, undeveloped, 6282
 its chief industry, 202
 methods of fishing, 6279
 not joined Dominion of Canada, 1244, 6282
 where the codfish reigns, 6279
 where the sea gives a livelihood, 1090; picture,
 6281
 why cod are so plentiful in its waters, 6280
Newfoundland dog, 500; picture, 498
New France, made a royal province, 538
Newgate, the prison, 1297
New Glasgow, Can., mining town, 5601
New Guinea, north of Torres Straits, 1466
New Guinea bird of paradise, 1738
New Hampshire, colony of, 525
New Haven (Conn.), colony annexed to Con-
 necticut, 524
New Hebrides, house on stilts, picture, 1465
New Jersey, colony of, 521
Newman, John Henry, poem: see Poetry Index
 portrait, 1395
 wrote hymns, 1995, 2000
Newmarket, Byard's famous leap, 3208
New Mexico, territory surrendered by Mexico,
 1832
New Netherland, colony of, 520
New Orleans, as a port, 6116
 battles of, 1400, 2014
 benefited by dredging of the Mississippi,
 3537
 its French quarter, 5985
New Quebec: see Ungava
New Siberian Islands, position, 3752
New South Wales, claimed for England, 355
 explored by Captain Cook, 1356
 homestead, picture, 1363
 what kind of country it is, 1360
Newspaper, how can it be made for a penny,
 5382
New Sweden, colony of, 521
Newton, life-story, 1222; picture, 1228
Newton, Sir Isaac, boyhood, 303
 discovered the law of gravitation, 308, 1661,
 1944, 2426, 3240, 3547
 experiment with light, 5177
 his laws of motion, 3469, 4744
 his mistake about light, 5040
 one of our great men of learning, 1100
 studied electricity, 2114
 studying sunlight, picture, 1663
 what he thought of light, 1267, 2797
New Year's Day, customs of, 4470
New York, 521
 description of upper part with pictures, 5179
 history and description, with pictures, 4307
 public library, picture, 5183
 renamed, 4036
 Singer and Flat-iron buildings, picture,
 2663
 skyline, picture, 2657
 skyscrapers, 2633
 Statue of Liberty, picture, 2666
 story of Knickerbocker days, 5533
 view of Broadway, picture, 2421
 water supply of city, with pictures, 5115
 what it does for its children, with pictures,
 3193
 Zoological Park, 6147
New Zealand, climate and products, 1462
 discovery by Captain Cook, 1459
 flag, picture in colour, face 1640
 its position, 63
 map, 1459
 natives of, 1459, 4038
 Parliament, 1464
 population, 1466
 story of New Zealand, 1459
 watercress introduced, 4967
New Zealand wood-hen, bird, 1430
Ngaml Lake, discovered, 282
Niagara, the, a brig, 4279
Niagara Falls, in America, 212, 680
 in Canada, 6184
 pictures, 680, 681
Niagara River, 20, 680
Niazi Bey, Young Turk leader, 3226
Nicaragua, an independent republic, 4392
 flag, picture in colour, face 1640
Niccolo, Pietro, famous sculptor, 1254
Nice, town on the Riviera, 2398
Nicholas I., tsar of Russia, reign, 3632
Nicholas II., tsar of Russia, 3632
Nicholas III., pope, 4948
Nicholas V., pope, 4946, 4948
Nicholas, St., real Santa Claus, 1013; picture,
 1006
Nicholas Nickleby, story of the novel, and pic-
 tures, 2633, 2635
Nicholson, Judge, suggested the tune of The
 Star-Spangled Banner, 2956
Nickel, in Canada, 5600
 on pins, 288
Nicotine, its effect on the body, 3318
Niger River, in Africa, 4254
Night, meaning of night and day, and picture,
 78
 what would happen if it were always night, 79
 why it is dark at night, 622

INDEX

- Nighthawk**, in Canada, 3489
Night heron, 1954; picture, 1950
Nightingale, Florence, her life, 561
 pictures, 561, 562
 went to the Crimea, 1098, 3632
Nightingale, how a nightingale helped a knight to escape, story, 2745
 its life-story, 2052, 2328
 nests of, 5779
 pictures, 2053; in colour, 1744
 the emperor's nightingale, story, with pictures, 3203
Nightjar, 1748; pictures, 1736, 1744
Nightmare, what it is, 2671
Nightshade, deadly, 4616; pictures, 3895, 4612
 woody, 4289; with picture, 4286
Nijni-Novgorod, fairs, 3750; picture, 3744
Nikko, a beautiful town, 370
Nile, battle of the, 2274, 4360
 drawing water from the Nile, pictures, 5817, 5821
 river in Egypt, 279, 4254, 4260, 5814
 the damming of the, with pictures, 5400
Ninebark, picture, 4837
Nine holes, game, 1614
Ninety-nine, how to multiply by, 579
Ninety-three, extract from book, 5593
Nineveh, Ashur-bani-pal's library, 4980
 built by Babylonians, 4976
 discoveries at, 4977
 its destruction, 4982
 taken by the Medes, 5057
Nippon, largest island of Japan, 370
Nirvana, believed in by Buddhists, 2996
Nithsdale, Earl of, how he escaped from the Tower of London, and picture, 2203
Nitrate of soda, found in Chile, 4572
Nitrates, help to grow wheat, 1798
 supplied to plants by microbes, 3340
Nitre, gives off its oxygen easily, 2228
Nitric acid, 1798, 1801
Nitrogen, amount in the air, 939
 an element in the air, 903, 938
 chief gas in the air, 1130
 contained in some acids, 1797
 dissolved in the blood, 1443
 forms compound with oxygen, 1666
 necessary to life, 3339
 what kind of element it is, 1196
Nitrous acid, what it is, 1798
Noble men, a band of, story, 4010
Nodes, what they are, 4917
Noise, cannot be heard without air, 3976
 influence on the brain, 4759
 loud noises make us deaf, 2458
 music and noise, 4757
 noise from stick swung in the air, 4827
 noise when a bag bursts, 3095
 noise will break a window, 911
 what a noise is, 509
 what makes noise, 3976
 why we are afraid of loud noises, 2674
None-so-pretty, London pride, picture, 4838
Norfolk Island, off Australia, 1466
Norman buildings, have round arches, 592
Normandy, an interesting place, 2399
 conquered by Philip Augustus, 2067
 fisher-woman, picture, 2395
 founded by Rollo, 3592
 in France, 434
 named after the Northmen, 2066
Normans, erected many buildings, 591
 ruled in England, 436
 settled in South Italy, 3014
Norsemen, the, 257
North, Lord, 992
Northallerton, battle of, 3079, 3080
North Cape, discovery by Onthero, 4720
 in the island of Mageroe, 3601
North Carolina, a slave state, 2010
 cotton field and cotton mill, picture, 5988
 local holiday in, 4470
 lost colony of Roanoke, 6131
 Mecklenburg Declaration of Independence, 984, 4470
 seceded, 2012, 3536
North Dakota, admitted, 3537
Northern Crown, see *Corona borealis*
North Magnetic Pole, 4438, 5254
Northmen, invaded France, 2065
 invaded Scotland, 434
 settled in Normandy, 434
North Pole, how Peary found it, 5211
 its position, 411
 movement of earth at, 5167
 pictures, 4729
North Sea, 194, 2750
North Sea Canal, 3464
Northumberland, Duke of, 2534
Northumbria, ancient kingdom, 428
Northwest Company, founded, 5148
Northwest Mounted Police, the Royal, history and work, with pictures, 4577
Northwest Passage, the, 262, 266
 search for, 218, 4724
Northwest Territories, description of, 1822, 1918
 government of, 1330
 included in the Dominion, 1247
 purchased, 220
 transferred to Canada, 1246
Norton, Hon. Mrs.: see Poetry Index
Norway, flag, picture in colour, 1640
 has sunshine all night, 3600
 history and geography, 3591
 its separation from Sweden, 3598
 pictures, 3597
 relief map, 3602
 towns and firds, 3601
Norway, Maid of, queen of Scots, 118
Nose, affected by smell, 4627
 filters the air we breathe, 1634, 1789
 how to stop the nose bleeding, 3397
 picture, 4627
Notebook, how to make, and picture, 2871
Notre Dame, cathedral, 2064, 2318
 history, with pictures, 5332
 in Montreal, picture, 5871
Nottingham Castle, the heroine of Nottingham Castle, story, and picture, 3471
Nougat, how to make it, 3512
Noughts and crosses, game, and picture, 5113
Nourreddin, and the wonderful Persian, story, and pictures, 2739, 2741
Nova Scotia, description, 5601
 Legislative Council of, 1330
 minerals in, 5599
 progress, 745
 province of Canada, 216, 539
Nova Scotia, Order of Baronets, established, 539
Novaya Zemlya, explored, 4724
November, how it got its name, 4521
 shooting stars in, 152
 symbolic of November, picture, 4520
Novgorod, desolated by famine, 3624
 liberties crushed by Ivan III., 3626
 member of Hanseatic League, 3624
 town of Russia, 3624, 3750
Noyon, brave French maid of, story, 2630
Nuggets, of gold, 5298
Numbers, cards that tell any number thought of, 5660
Nummulites, form stone, 2336
Nun pigeon, has a hood, 2215
Nuremberg, toys made, 2755
Nussbach, in Black Forest, picture, 2751
Nut, various kinds, with pictures, 1965
Nuthatch, bird, 2218; picture, 2217
 Canadian varieties, 3041
Nuzio, Allegretto de, 4948
Nyassa, Lake, drained by Shiré River, 4254
Nymph, story of a water nymph, 5518

O

- Oak**, and the reed, fable, with picture, 5205
 and the acorn, 63
 blossoming time, 2836
 Californian live-oak, 5440
 description of the white, 5446
 hard wood, 1617, 4998
 live-oak, picture, 5623
 picture, 3179
 pin-oak, 5626; picture, 5623
 struggle for life, 3834
 what kind of tree it is, 3179
Oak-apple, 2460; picture, 3895

INDEX

- Oak-wood**, how it is carpeted, 3951
Oars, first use by men, 73
Oases, fertile spots in a desert, 3073
Oats, an important crop, 2422
 cakes made from oatmeal, 1144
 grasses, pictures, 1335, 2976, 2977
 value as food, 2926; picture, 2923
Oates, Captain, death of, 5054
Obi River, over 2,000 miles long, 3752
Object game, how to play it, 2573
Object lesson, in French, 5111
Oboe, a reed instrument, 2051
Obsidian, kind of lava, 3229
Obstacle race, how to arrange it, 3614
Occupations, what "blind-alley" ones mean, 6165
Ocean, full of life, 360
 great masses of water, 3004
 how the cold water sinks, 4182
 where the water came from, 3429
Oceania, islands off Australia, 1466
 types of the people, picture, 1463
Ocelli, what they are, 2797
October, how it got its name, 4521
 symbolic of October, picture, 4520
Octopus, sea-animal, and picture, 2450
Ode, what it is, 343
Odense, ancient city of Denmark, 1468
Oder River, in Germany, 2752
Odessa, bombarded by the allies, 3632
 foundation, 3631
 port of Russia, 3750
Odin: see Woden
Odysseus: see Ulysses
Odyssey, relates Grecian history, 5122
 the story, 68
Œdipus, the story of his life, 2738
Oersted, Hans Christian, portrait, 4313
 the magnet and electricity, discovery, 2119, 4314
Offero, became St. Christopher, 1008
Ogilvie, Will H.: see Poetry Index
Oglethorpe, James, 524
Ohio, admitted, 3534
 settlement and naming of, 1822
Ohio Company, 882
Ohthere, his Arctic expedition, 4720
Oil, conveyance from Baku, 3752
 difference between fat and oil, 2802
 exists after being burnt, 5023
 got from the hazel nut, 1965
 how it calms water, 2505, 5020
 viscous liquid, 2505, 5020
 what fixed oils are, 2802
 where it comes from, 3238
 why it burns so easily, 3378, 5022
 why it floats on water, 3865
 why it makes a wheel go round more easily, 4601
 why it will not mix with water, 37
 why water goes into beads when put on an oily plate, 2505
Oilstone, for sharpening tools, 339
Oil-wells, 4131; with pictures, 4133
O'Keefe, Adelaide: see Poetry Index
Oklahoma, state, 5986
 territory opened, 3537
Olaf, crown prince of Norway, 3598
Olaf, king of Norway, 3594, 3602
Olaf of Orchard Farm, pictures, 5877
Old Castile, province of Spain, 3353
Old Curiosity Shop, The, story of the novel, and pictures, 2757
Olden, Lake, in Norway, and picture, 3599
Old Ironsides, nickname of the frigate Constitution, 2902
Old maid, game, 4885
Old Man, rock picture, 1058
Old man and his sons, fable, 3062
Old Mortality, Elizabeth Patterson's ancestor, 4909
 story of the novel, with picture, 1760
Old Tom Peabody, a song-bird, 3493
Olga, queen of Russia, 3624
Oliphant, Mrs., life, 2599; portrait, 2593
Olive oil, used instead of butter, 1144
Oliver Twist, the story of the novel, and pictures, 2551
Olympic games, held at Olympia, 5128
 held by the Greeks, 1803
 pictures, 5123
Oman, flag, picture in colour, 1640
Omar, second caliph, 3876
 troops conquered Egypt, 4256
Omdurman, battle of, 4260
Omnibus, introduced into England, 6107
 the first omnibus, picture, 6109
Omsk, agricultural centre, 3752
Onions, how to grow onions, 2971, 3922
 must be hand-weeded, 3278
 why they make eyes water, 1989
Ontario, education in, 5233
 has splendid farms, 214, 216
 minerals in, 5599
 province created, 1244
Ontario, Lake, 212
Oolite, what it is like, 5197
Oozes, deposits in the oceans, 2620
Opal mine, 2860
Opaque, what it means, 1266
Ophion ichneumon, picture, 3257
Opie, Mrs. Amelia: see Poetry Index
Opium, smoked in China, 114
Oporto, famous for wine, 3361; picture, 3357
 foreign trade, 3353
Opossum, life-story, 864; pictures, 51, 863
Opossum mouse, 768
 care of young, 5480
Optical illusions, 104
Optical lantern, magic lantern, 2767
Orache, picture, 5187
Orange, curious ways of peeling, 5662
 how it grows, picture in colour, 643
 orange grove, picture, 2419
 where it grows, 641
 why it does not grow in England, 3384
Orange, colour, how to make, 1935, 4508
Orange Free State, 1769, 1770
Orange River Colony, 1768
Oranges and lemons, game, 4144, 5196
Orange-tip butterfly, picture in colour, face 2982
Orange-utan, effort to communicate thoughts, 5323
 help in the study of human disease, 3077
 its life-story, 604
 pictures, 51, 603
Orb, origin of, 5650
Orchestra, its sound waves, 4758
Orchids, with pictures, 4422, 4423
 flowers described, 2842
 purple-fringed, description, 3050
Orchis, bee, 4423; picture, 4422
 bird's nest, 3830, 4423; picture, 4421
 butterfly, 4423; pictures, 4421, 4422
 dwarf, 4423
 fly, 4423; picture, 4422
 frog, 4423
 green-man, 4423
 green-winged, 4423; picture, 4422
 purple, 4423
 showy, 2842
 spotted, 4423; picture, 4421
Oregon, admitted, 1836, 3536
 discovery of, 1896
 settled and ownership questioned, 1830
 question concerning ownership, 3535
O'Reilly, John Boyle: see Poetry Index
Orellana, Francisco, explorer, 4505
Ore Mountains, in Germany, 2752
Orenburg, on Ural river, 3753
Orestes, hero of a story, 5312
Organ, how the sound is made, 3096
Organic chemistry: see Chemistry
Orient Express, 3224
Oriental hyacinth, 5272
Origin of Species, by Darwin, 2883
Orinoco River, 4498, 4574
 explored by Raleigh, 5395, 5396
Oriole, like a friar-bird, 3415
 varieties in Canada, 3488
Orion, constellation, 1948, 2614, 2866
 legend of Orion, 3313
 pictures, 1949, 2617
Orleans, town of France, 2399
Ormuz, city that Marco Polo visited, 55
 Portuguese driven from Ormuz, 3580
Ormuzd, god of the Zoroastrians, 3000, 5058
Orodes, Parthian king, 5065
Orpine, a sedum, 5271
Orthoptera, order of insects, 3141
Oriolan, eaten as a dainty, 2057
Ortrud, in Lohengrin, 5093
Osborne Naval College, 3232

Osgoode Hall, in Toronto, picture, 1754
O'Shaughnessy, Arthur: see Poetry Index
Osiers, used to make baskets, 395
Oslo, old town of Norway, 3602
Osman, leader of the Ottoman Turks, 3878
Osprey, fish-eating hawk, 1843, 3039; picture, 1838
 nest of, picture, 5785
Ostrich, bird that cannot fly, 48
 ostrich farms in Africa, 1766
 pictures, 51, 1429
 what kind of bird it is, 1426
Oswego, captured, 540
Otago, province of New Zealand, 1464
Othello, story of play, and picture, 473-474
Othman, third caliph, 3876
Otho, overthrew Galba, 531
Otis, Elisha G., as inventor, 2670
Ottawa, capital of Canada, 214, 1242, 6184
 building, picture, 1324, 2266
 picture, 4303
Ottawa River, view on, 4095
Otter, catches fish, 140
 dwelling, 5414
 education of, 5480
 how it is hunted, and picture, 2729
Otumba, battle of, and picture, 4385
Oudenarde, battle of, 2530
Our Mutual Friend, story of novel, 2436
Outlines, game, and picture, 5113
Outram, relieved Lucknow, 1706
Oval ring taw, game, 5106
Oven-bird, 3497
Overhand knot, 235
Overstrung, in piano, 4914
Overtones, in sound, 2620, 4864, 4913
Ovolo moulding, what it means, 1346
Owen, Robert, work as a reformer, 3702
Owen, Sir Richard, English naturalist, his life, 854; portrait, 851
 with skeleton of *dinornis*, picture, 855
Owl, pictures, 51, 1847
 varieties in Canada, 3039
 what kind of bird it is, 1848
 why it comes out only at night, 1867
Owl moth, 2992
Owl parrot, 1430; picture, 1431
Oxalis Acetosella, and Fra Angelico, 3052
Ox-bot, insect, 3262; picture, 3257
Ox-eye daisy, 4112
Oxidation, what it is, 1293, 3236
Oxide of calcium, what it is, 4339
Oxide of iron, what it is, 1776
Oxide of lead, its use, 2129
Oxide of potassium, effect of water, 1800
Oxide of sodium, effect of water, 1800
Oxide of sulphur, how it is made up, 1290
Oxley, Lieutenant, explored Australia, 356
Oxus River, 3940
Oxygen, an element, 938
 contained in most acids, 1798
 forms compounds with nitrogen, 1666
 given out by plants, 2077, 4748
 helps to make us warm, 546
 how it gets to the bottom of the sea, 362
 in the air, 285, 1130
 in water, 1040, 1797, 1363
 its specific gravity, 3816
 most important gas in the blood, 1443
 need of in body, 6252
 not necessary in the sun, 3431
 oxidation of fruit, 5641
 pure oxygen does not kill us, 4117
 taken in by rocks, 4545
 to purify water, 5119
 what kind of element oxygen is, 1195
Oxyhaemoglobin, what it is, 1385
Oyster, attaches itself to rock, 2588
 how an oyster makes a pearl, 171
 how oysters are cultivated and gathered, with pictures, 3771, 3773, 3774
 lawyer and the oyster, story, 4938
 not a fish, 661
 of Canada, 3898
 pearl in the oyster, picture, 175
 pictures, 51, 2589
 supply of oysters in U. S., 2658
Oyster-catcher, a bird, 1953, 2590
 picture, 1959
Ozone, variety of oxygen, 1859

P

Pacific Ocean, discovered, 258, 266
 how it was discovered, 60
 is the deepest ocean, 1466
Page, C. G., and the electro-magnet, 4317
Pagodas, are temples, 1880
Pain, animals' feelings, 4598
 avoidance by numbing nerves, 4343
Pain, special nerves of pain sense, 1964
 what we know about it, 3092
Paint, how to clean, 4456
Paint brushes, how to clean, 4456
Painted Desert, The, pictures, 3589
Painted lady, butterfly, 2992
 picture in colour, face 2982
Painters, twelve great painters, 757
Painting, colours, and how to use them, 2654
 drawing and painting a daisy, 2894
 how to paint, 253, 3497
 how to put on a graduated wash, with picture, 3292
 spray of leaves, 1453
Pair of new boots, 6201
Pakenham, Sir Edward, 1400
Palaeomastodon, skull, picture, 3679
Palaeontology, what it is, 852
Palafox, José, defended Saragossa, 4645
Palamides, Sir, overcome by Tristram, 3212
Palatine Hill, colony founded by Romulus on, 5260
Pale, in the flower of grass, 1332
Palestine, conquered by Saladin, 1589
 now largely a desert, 3073
 pilgrimages to, 1585, 3874
Palestrina, Giovanni Pierluigi da, wrote a mass, 3243; with portrait, 3243
Palestro, battle of, with picture, 3021
Palissy, Bernard, life, 4558; picture, 4559
Palladio, Andrea, his life, 1254
Palm, Californian fan-palm, 5440
 Washington fan-palm, picture, 5441
Palmer, British midshipman, how he saved his companions, story, 4178
Palmer, Erastus, sculpture of, 4842
Palmer, John, started mail coaches, 4380
Palmerston, Henry John, Viscount, a Liberal prime minister, 2386
 pictures, 2379, 2383
Palmetto, history of, 5440
 the cabbage palmetto, picture, 5441
Palmetto State, why South Carolina is called the, 5440
Palo Alto, battle of, 1832
Pamir Plateau, in Central Asia, 3931
Pampas, plains of South America, 3075, 4500
Pampas grass, 4500
Panama, flag, picture in colour, face 1640
 may be cleaned by the U. S., 2190
 republic, 4392
Panama, Isthmus of, exploration, 258, 266
 where it is, 4381
Panama Canal, digging the, with pictures, 5631
 its construction, 4392, 4576
 pictures, 4387, 4389
 United States authority over, with pictures, 2190
Pancreas, how it digests fats, 2346
Panda, a Zulu king, 1769
Pandora's Box, story of, 5078
Panel, in carpentry, 1510
 in sculpture, 4159
Pangolin, animal, 1002; picture, 1001
Panorama, how to make a moving panorama show, 5663
Pansy, how to plant, 572
 its cultivation, 5271
 likes moisture, 1074
 pictures, 573
 story about the pansy, 190
 when to sow seed, 1350
 wild pansy: see Heartsease
Paoli, Pasquale, de, picture, 4099
Papal States, governed by the popes, 3014
Paper, discovery of process of making rags into, 2527
 how it is made, with pictures, 888
 how to boil water in, with picture, 581
 how to make a box, with picture, 234
 how to make a long chain from a piece of paper, with picture, 98, 3518

INDEX

- Paper**, how to make dolls, with picture, 341
how to make paper flowers, 4140
production of in U. S., 2664
things to make with folded paper, with pictures, 4776
through the microscope, picture, 2325
what it is made from, 888
what to do with a piece of paper, 1925
what to use for drawing, 252
why heat makes it curl up, 3979
- Paper chase**, how to arrange, 6007
- Papin, Denis**, and steam navigation, 2468
- Papineau, Louis**, a political leader, 746
- Papuan bower bird**, 1745
- Papyrus**, Egyptian papyri deciphered, 4782
how Egyptians wrote on it, picture, 5099
papyrus plant, picture, 5099
the earliest writings, 3399
used by the Egyptians as paper, 5099
- Para**, a port of Brazil, 4505, 4567
- Parachute**, how to make of paper, with picture, 1925
- Paradise-fish**, with picture, 2683, 2684
- Paraffin**, how it is obtained, 2363
what it is, 4114
- Paraguay**, a state of South America, 4502, 4572;
flag, picture in colour, 1640
- Paraguay River**, 4568
- Parakeet**, an Australian bird, 1747
- Paraldehyde**, makes people sleep, 1873
- Parallels of latitude**, how they are drawn, with picture, 1750, 1751
- Parana River**, flows into river Plate, 4568
- Parasite**, lives on other animals, 3145, 3830
- Parasitic plants**, 3830
- Parachment**, was used for writing on, 3399
- Parsoner's Tale** in *The Canterbury Tales*, 440
- Paré, Ambroise**, his life, 4198
- Parrelle, Jeanne**, the devoted daughter, 321
- Parental instinct**, 5133
- Parime Mountains**, 4574
- Paris**, stole Helen of Troy, 67, 1683
- Paris**, a first holiday in, with pictures, 5331
Arc de Triomphe, picture, 5012
description of the city, 2393
general view of the city, picture, 2393
girl who saved Paris, story, 2317
Marseilles men march to Paris, 2272
Opera House, picture, 2393
Place de la Concorde, picture, 2391
Vendôme Column and Arc de Triomphe, 5005
was besieged by the Germans, 2277, 2580
- Park, Mungo**, explorer, 282; portrait, 283
- Park, Richard Hamilton**, sculpture of, with picture, 4849
- Parker, Samuel**, bishop, 4557
- Parker, Sir Gilbert**, life-work, 4302; picture, 4301
- Parker, Theodore**, as anti-slavery leader, 2009
- Parks**, Stanley Park, pictures, 5429, 5610
Yellowstone National Park, 587
- Parliament**, British, founded, 600
its power established, 1029
more people could vote, 1100
scenes in, picture, 2383
sent message to Turkish Parliament, 3226
Simon de Montfort founded the, 2067
union of Irish and British, 1096
union of the English and Scottish parliaments, 1029, 2540
what the word means, 3780
- Parliament**, Canadian, 214, 745, 1240, 1242, 1244, 1246
Library of, picture of, 4303
powers and membership, 1326
- Parliament, Houses of**, how they were built, 1164; picture, 1165
- Parmelee, George W.**, portrait, 5236
- Parthasius**, a Greek painter, 4585
- Parrot**, different kinds, pictures, 1743
different species, 1747
does not know what it is talking about, 3234
how long it lives, 2328
meeting of parrots, picture, 1739
the cat and the parrot, story, 2494
why it can talk, 1269
- Parrot-wrasse**, fish, 210; picture, 209
- Parry, Sir William**, an explorer, 4724
portrait, 4725
- Parsees**, who they are, 3878
- Parsley**, family of, 4112
how to grow, 3176
- Parsnip**, its family, 4112
- Parsons, Hon. Charles A.**, made the steam-turbine, 2474; portrait, 2467
- Parthenon**, Greek temple, 620, 3220
how to make with reels, and picture, 4352
its building and sculptures, 5128
pictures, 4164, 5125
- Parthians**, ruled Persia, 5065
war with the Romans, 5065
- Partridge, William Ordway**, sculpture of, 4848
- Partridge**, description, 1518
how it protects its young, 1518
how long it lives, 2328; picture, 1517
in Canada, 3037
reared by hand, 1513
See also Grouse
- Partridge Vine**, 3052
- Party**, entertainment for, and pictures, 5103
how to give a Children's Encyclopædia party, 4248
- Pascal, Blaise**, discovered the law of equality of fluid pressure, 3948
experiment with atmospheric pressure, 3944
originates omnibus, 6107
- Passau**, a town in Austria, 2856
- Passes**, of Canadian Rockies, 5607
- Paste**, how to make paste for sticking cards, 2871
- Pasteur, Louis**, found everything wonderful, 940
his life, 4202; picture, 4199
studied microbes, 781, 907, 5754
- Pastures**, what they are, 1929
- Patagonia**, people, picture, 4503
plateau land, 4569
- Patching**, how to patch, with picture, 3515
- Pathans**, in India, 1550, 1700
- "Pathfinder of the Rockies"**, 1830
- Patmore, Coventry**: see Poetry Index
- Patricia, Princess Victoria**, 5431
- Patricians**, Roman nobles, 414
ruled Rome, 5261
- Patrick, St.**, an Irish saint, 1213
story of the flag of St. Patrick, 2333
- Patriots' Day**, in Massachusetts and Maine, 4470
- Patroclus**, the friend of Achilles, 68
- Patterns**, how to make and paint them, with picture, 2174
simple patterns with flowers, 3374
- Patterson, Elizabeth**, life as Madame Bonaparte, 4907
- Paul**, emperor of Russia, his reign, 3631
- Paul II.**, pope, 4948
- Paul VI.**, pope, 4951
- Paul, Vincent de**: see Vincent de Paul
- Paul, St.**, in Rome, 5806
places he may have visited, 2330
shipwrecked on Malta, 1875
- Pavia**, town in Italy, 3016
- Payne, John Howard**, author of *Home, Sweet Home*, life, 2953
see Poem: Poetry Index
- Paynim**, crusade against, 1587
- Paysandu tongue**, 4568
- Paz, Doña**, heroine of Mexican legend, 5231
- Pea**, everlasting, 4424, 5269, 5274
family of plants, 4111
how to grow, 2971, 3278, 3514
how to pick, 1509
picture, 4419
sweet, description of, 5269
the bag of peas, 5654
- Peabody, George**, helped the poor, 1100
- Peace**, heroes of, 3105
- Peace Palace** at The Hague, picture, 6199
- Peach**, peaches growing, picture in colour, 650
where it comes from, 642
- Peacock, Thomas Love**: see Poetry Index
- Peacock**, and the crane, fable, with picture, 5205
has a disagreeable cry, 1746
how long it lives, 2328
knows when rain is coming, 155
picture, 1741
the peacock and Juno, fable, 4008
- Peacock, the**, sloop of war, and Hornet, 1398, 2902
- Peacock butterfly**, 2992
pictures, face 2982, 3893
- Peacock throne**, picture, 3882
was in Delhi, 1548

INDEX

- Pea crab**, 2584
Peale, Charles Willson, life and work, 4148
Pea-nut, 1966
Fear, how the fruit is made up, 4110
 shaped into a goat, 5666
 the wild pear-tree, with picture, 3444
 when to gather, 4354; with picture, 651
 where our pears come from, 641
Pearl, how an oyster makes pearls, 171
 how it is found, with pictures, 172
 made by mussels, 2533
 pearl necklace, picture, 171
 where best pearl-oysters are found, 171
Pearl Mosque, a building in Agra, 1550
Pearson, Capt., commander of the Serapis, 2898
Peary, Robert E., Greenland expeditions, 4724
 how he found the Pole, 5211
 pictures, 4725, 4728
 reached the North Pole, 4726, 5051
Peary Arctic Club, formed, 5211
Peasant, and the three robbers, 5424
 at the flood, story, with picture, 4009
Peasants' War, in Germany, 2527
Pease, Edward, built railway, 614
Peat, what it is, 799, 3542
Pecan, nuts, 1965
Pecary, wild pig, and picture, 383
Pediment, a term in architecture, 1505
Pedro, king of Castile, was dethroned, 2806
Pee ku, game, 3920
Peel, Captain William, how he saved a battery, with picture, 3739
Peel, John, life of hero of song, with pictures, 5493
Peel, Sir Robert, abolished Corn Laws, 2386
 pleading for the poor, picture, 2385
 police nicknames derived from his name, 5382
 portrait, 2379
Pegasus, winged horse, 1050, 3313
Pegoud, Adolphe, aviator, 6084, 6085
Pelhu River, in China, 114
Pekin, besieged by the Boxers, 114, 368
 is made up of two cities, 114
 made the capital of China, 112
 marble bridge, picture, 30
 Temple of Heaven, picture, 2997
 views in pictures, 113
Pelagius, a pope of Rome, 4708
Pelargonium: see Geranium
Pe-le, supposed to be a goddess, 2491
Pelée, Mont., eruption of, 1878
Pelham, Peter, who trained Copley, 4147
Pelias, a usurper, 185
 king of Ioclos, 185
Pelican, bird, 1952, 2228; picture, 1950
Peling mountains, in north China, 106
Pelopidas, saved Greece, 1304
Peloponnesus, south of Greece, 1302, 5121
Pelvis, a part of the human body, 2546
Pen, different kinds of pens, 3399
 how pens are made, pictures, 2401
 why a pen and ink writes better on paper than on a slate, 1641
Pencil, how a lead pencil writes, 3979
 how pencils are made, pictures, 3403
 how to hold when writing, picture, 247
 how to sharpen a lead pencil, 6059
 mark, through microscope, picture, 2325
 when first used, 3400
 why a slate pencil writes on slate but not on paper, 1641
Pendennis, the story of the novel, with picture, 3473
Pendulum, illustrates kinetic and potential energy, 3552
 its swing a true vibration, 3469
 why it swings to and fro, 3549
 why it will not swing for ever, 3544
Penelope, her tapestry, story, 962
 the wife of Ulysses, 63
Penguin, how the sheath-bill robs it, 1626
 is killed for its oil, 1632
 pictures, 51, 1431
 what kind of bird it is, 1430
Peninsular War, 4362
Penn, William, 521
 portrait, 519
Pennines, length, 4497
 seize moisture of west winds, 3352
Pennsylvania, colony of, with picture, 517
 founding of, 521
Penny, disappearing penny trick, with picture, 2355, 4773
 electric penny trick, with picture, 4455
 how it is made, 3617
 how to pick marked penny from hat, 5112
 how to make it rise in water, with picture, 530
 how to move without touching, 5453
 meaning of words round it, 3380
 suspended penny trick, with picture, 4666
 three pennies make fourpence, trick, 5112
Penny post, its introduction, 1099
Pennywort, marsh, 5038, with picture, 5035
Pennywort, wall: see Wall pennywort
Peony, description, 5271
 its cultivation, 5271
People, can we think about people without seeing them in our mind? 5486
Peplin, gave Lombards' land to pope, 2524
Pepperell, William, in command of Louisburg expedition, 540
Peppermint, a herb, 3176; picture, 3831
Peppermint creams, how to make, 3512
Pepper-root, the toothwort, 2841
Pepsin, a ferment that digests food, 2344
Pera, quarter of Constantinople, 2326
Per cent., what the term means, 1169
Percept, meaning of word, 4939
Perch, fish, with pictures, 2683
Percivale, Sir, search for Holy Grail, 871
Peregrine falcon, 1846; picture, 1845
Perennial candytuft, 1074
Perennial plants, what they are, 719, 1816
 when to buy, 1817
Perennial rye grass, picture, 1340
Perfume, how to make from flowers, 1501
Pericles, helped with Acropolis buildings, 5128
 how he ruled Athens, 1302
Perim, a coaling station, 1876
Periscope, description, 5586
 pictures, 5591, 5592
Periwinkle, fish, 2590, 4454; picture, 2589
Periwinkle, plant, picture, 572
Perkin, Sir William, discovered dyes, 2507
Pero, the magic boy fiddler of Sicily, story, with picture, 557
Peroxide of hydrogen, its formula, 1670
Perpetual motion, 3550
 could a machine go on for ever, 5958
Perrault, Charles, wrote fairy tales, 1467
Perronet, Edward, wrote a hymn, 2000
Ferrot, Nicholas, visited the site of Chicago, 5513
Perry, Commodore, portrait bust of, 4844
 traded with Japan, 366
Perry, James, made metal pens, 3400
Perry, Oliver Hazard, on Lake Erie, 746, 1399, 2902, 4279
Perry, made from pears, 651
Perryville, battle of, 2016
Persepolis, pictures, 5063
 ruins found, 5060
 taken by Alexander the Great, 5061, 5065
Perseus, his adventures, with picture, 1049
 saved Andromeda, 3314
Perseus, constellation, 2612; pictures, 2615, 2617
Persia and Persians, a journey to Ispahan, 3381
 attacked Georgia, 3631
 conquered the Punjaub, 1700
 decline of power, 5064
 defeated by Heraclius, 3152
 destruction of Acropolis, 5123
 extension of empire by Darius, 5060
 fought with the Turks, 3158
 history, 3873, 5057
 power in Egypt, 4256, 4790, 5060, 5064, 5065
 religion, 5058
 revival of power, 5066
 the Bible of Persia, 5066
 the rise and fall of Persia, 5057
 the unhappy king of Persia, story and picture, 816
 took Babylon, 4984, 5058
 took Phenicia, 5124
 union with Media, 5058
 war with Russia, 3632
 wars with Greeks, 1302, 1306, 3876, 5060, 5129
 wars with Mesopotamia, 4974

INDEX

Pictures of Persia and Persians

defeat by Greeks at Issus, 5059
 flag, in colour, face 1640
 king receiving tribute, 5063
 king's bodyguard, 5057
 Persia, Asiatic Turkey, and Arabia, 3875
 Persian on a donkey, 3873
 Persians clamouring for parliament, 3879
 rebels and Shah's representatives, 3882
 tombs in the desert, 3877
 types, 3879
Perspective, pictures with wrong perspective, 4881
 what it is, 1578
Perspiration: see Sweat
Perth, capital of Western Australia, 1362
Peru, account of the country, 4572
 added to Spain's dominions, 3356
 animals, 4574
 became independent, 3360, 4506
 flag, picture in colour, face 1640
 Inca kingdom destroyed by Spain, 4504
 where it is, 4500
Pestalozzi, John, his work for children, 2968, 4177; picture, 4177
Petals of flower, picture, 3736
Peter the Great, of Russia, his life, 3628
 interest in Archangel, 3753
 memorials in St. Petersburg, 3746, 3748
 scenes from life, pictures, 3627
Peter III., of Russia, 3630
Peter of Moron, a hermit who became pope, and picture, 459-460
Peter, St., in Rome, 2330, 5806
Peter the Hermit, 1493, 1586
Peter Martyr, what he said of Isabella of Castile, 2367
Peter Pan, story of, and pictures, 2843
 written by J. M. Barrie, 1474
Petersburg, siege of, 2020
Peterson, William, of McGill, portrait, 5235
Peter Simple, the story of the book, 2028
Petition of Right, signed, 1887, 1892
Petőfi, Hungarian poet, 5716
Petrarch, an Italian poet, 3328
 life, 5219; portrait, 5217
Petrel, different kinds, 1626; pictures, 1627
Petrification, of wood, 5250
 petrified forest, picture, 3071
Petrol, contains hydrogen, 1167
 its specific gravity, 3816
 means rock oil, 3233
Petroleum, and by products, 4131-4134
 in Canada, 5600
 production of, in U. S., 2661
Petrous bone, is part of the skull, 2542
Pettie, John, his pictures, 1323, 1499
Pettigrew, J. J., with Pickett's charge; death, 2016
Pewee, the wood, 3490
Pewter, formed of tin and lead, 1870
Phagocytes, what they are, and picture, 785
Phalanger, flying: see Flying phalanger
Pharaoh, a title of the rulers of Egypt, 4787
 on his way to temple of Ammon, picture, 4781
Pharaoh's chicken, the vulture, 1844
Pharsalia, battle of, 420, 5266
Pheasant, how long it lives, 2328
 its life-story, 1514
 pictures, 51, 1516
 the different kinds of pheasants, 1515
Pheasant's-eye narcissus, 5272
Phaedippides, how he ran from Marathon to Athens, with picture, 1803
Phelps, Elizabeth Stuart, life, 2048
Phidias, a great sculptor, 620, 1302
 decorated the Parthenon, 4160
 helped with Acropolis buildings, 5128
 made the statue of Athena, 5125
Phigalæia, frieze, picture, 4159
Philadelphia, 521
 as art centre, 4148
 World's Fair in, 3537
Philadelphia, the, war-ship, destroyed at Tripoli, 2900
Phile, Island of, its temples, 4792
 submerged in reservoir, 5408
Philip, duke of Burgundy, 3460

Philip, king of Macedon, 1304, 5130
 stories concerning, 5312, 5313
Philip, prince of Orleans, 4060
Philip I., king of Spain, 2527
Philip II., king of Spain, built the Escorial, 5499
 his reign, 3356
 husband of Mary I. of England, 845, 2534
 made himself king of Portugal, 1702
 pictures, 3351, 3361
 ruled over the Netherlands, 124, 5171
 seized Brazil, 4506
 sent the Armada against England, 2536
 treated the Netherlands cruelly, 3460
 wished to marry Queen Elizabeth, 848
Philip Augustus, king of France, conquered Normandy, 2067
 had to obey Innocent III., 4715
 took part in the Third Crusade, 1589
Philiphaugh, battle of, 1896
Philippa de Rouet, Chaucer's wife, 3328
Philippa of Gaunt, 3354
Philippa of Hainault, wife of Edward III., saved the citizens of Calais, 750, 2533, 5331
Philippi, battle of, 5218
Philippines, what they are, 1304
Philippines, history and description of, with pictures, 2182, 2185 to 2187
 sold to United States, 3360, 3538
Phillips, Thomas, a teacher who encouraged Chatterton, 5318
Phillips, Wendell, as anti-slavery leader, 2009
Philology: see Language, Reading Words, etc.
Philopomen, a famous Greek, 1308
Phlox, plant, 572, 1074
Phoebe, in Canada, 3490
Phœbus Apollo, the sun god, 84
Phœnicians, bartering with the Britons, picture in colour, face 190
 defeated by Greeks, 1306, 5129
 rise to power, 5122
 were great explorers, 53, 279
Phœnician wars: see Punic wars
Phoenix, a golden pheasant, 1515
Phos, what it is, and picture, 2587, 2589
Phonograph, box (the) that speaks to us, with pictures, 5695
 effect of trumpet, 5021
 invented by Edison, 3091
 invention of, 4449
 way of studying sound waves, 4917
Phosphorescence, what it is, 3694
Phosphoric acid, symbol of, 1798
Phosphorus, an element, 773, 1294
 often poisons people, 776
Photography, how a camera takes a picture, 39
 how moving pictures are made, 5083
 how the camera takes a photograph, pictures, 41
 how to photograph without a camera, with pictures, 2685
 how to take faked photographs, 4666
 photographs taken on a table, pictures, 4664
 photography on a table, 4665
 what a photograph is, 39
 what the word means, 4548
 why developed in a red light, 1993
Phrases, foreign words and phrases, 5698
Phrenology, its use, 4444
 why it cannot tell about the brain, 3716
 why it cannot tell about the character, 2544
Physics, balancing feats, 5659
 what it means, 3344, 3465
Piano, experiment with held notes, 4915
 good and bad pianos, 4914
 home of fairies and goblins of music, 250
 how it is made, pictures, 1016
 how it plays, 509
 how to sit at the piano, 3291
 how we got the piano, 1015
 how we should play, picture, 3291
 the keyboard, pictures, 250, 3427
 tuning of pianos, 4914
 what over-strung means, 4914
 why things jingle when we play, 4915
Picard, Jean, discovery of size of earth, 1661
Pickens, Andrew, 990
Pickeral-weed, description, 3053
Pickersgill, Mrs. Mary, made the flag that Francis Key referred to in the Star-Spangled Banner, 2955

INDEX

- Pickett's Charge**, 2016
- Picking plums**, game, 5106
- Pickwick Papers, The**, story of the book, with picture, 2431
- Picnic**, preparing a lunch-basket, picture, 3615
- Picts**, in Britain, 198
- Picture of a golden deer**, story, 3790
- Picture frames**, how to make, with pictures, 1923, 4031
- Picture puzzles**, 1818, 3175, 3282, 3285, 3389, 3398 3510, 3518, 3516, 4756, 4766, 4774, 4890, 4999, 5114, 5458, 5916, 6006, 6060
- Pictures**, built up from squares, 1073
- distance in a picture, 1642
- drawn with wrong perspective, 4881
- how to draw a picture with 12 lines and a dot, 5454
- little talk about pictures, 4585
- making spinning, 5455
- why some faces in pictures seem to follow us 1866
- Picture-writing**, of Canadian Indians, 2774
- Piddock**, a name for the pholas, 2587
- Piedmont**, a province of Italy, 3012, 3024
- Pierce, Franklin**, administration, 3536
- as president, 2009; picture, 3532
- Piercy, Captain**, in command of the Countess of Scarborough, 2898
- Pierpont, John**: see Poetry Index
- Pig**, different kinds, 384; with pictures, 383
- eats snakes, 1380
- how long it lives, 2328
- how to make a stuffed pig, 829
- intelligence of, 5328
- three little pigs, story, with pictures, 4219
- Pigalle, Jean Baptiste**, a sculptor, 4162
- Pigeon**, different kinds, 2214; with pictures, 2213
- how it finds its way, 1371
- how long it lives, 2328
- how the pigeons were divided, story, with picture, 5159
- nests of, 5778
- the pigeon and the magpie, legend, 2744
- Pigeon-berry**, the Bunch-berry, 3050
- Pigment**, causes chameleon's change of colour, 2458
- colouring matter in the skin, 157, 4215
- Pigmies**, of Africa, 5569
- Pignall**, origin of, 116
- Pike**, its life-story, 2680; pictures, 2679
- Pilades**, hero of a story, 5312
- Pilatus, Mount**, hotel at the top of, 2960
- Pilchard**, what sort of fish it is, 206
- Pilgrimages**, to holy places, 1585
- to Mecca and Medina, 3876
- Pilgrim Fathers**, how they sailed to America, 1022
- Pilgrims, the**, 518
- forbade Christmas joys, 4470
- landing of, celebrated, 4463
- voyage of, pictures, 515
- Pilgrims, the**, a group of rocks, 5428
- Pilgrim's Progress**, story of, with pictures, 1115, 1135
- written by Bunyan, 1028
- Pillars of Hercules**, 3351
- Pillars of Solomon**, trick, and picture, 2870
- Pill millipede**, 3296; picture, 3297
- Pilon, Germain**, a sculptor, 4162
- Pilot fish**, 207; picture, 208
- Pimpernel**, closes its flower early, 3950
- Pin**, how pins are made, with pictures, 288
- how to support a plate on a pin, 98
- point, under microscope, picture, 2325
- why it gets hot if rubbed, 3094
- why we hear the scratching of a pin at the other end of a pole, 3385
- Pinckney, Charles Cotesworth**, 1394; portrait, 1395
- Pin-cushion**, how to make, and pictures, 2871, 2872
- Pindus Mountains**, 3149
- Pine**, description of sugar-pine, 5438
- description of white-pine, 5438
- how a pine forest is carpeted, 3951
- pine-cone decoration, picture, 4349
- sugar, picture, 5441
- white, pictures, 5439, 5443
- Pineapple**, gathering pineapples, picture in colour, 645
- where it grows, 642, 645
- Pineda**, 260
- Pine marten**, 140; pictures, 51, 137
- Pine-sap**, description, 3053
- Pine-Tree State**, why Maine is called the, 5438
- Pink**, grass: see Calopogon
- Indian: see Arethusa
- keeps green in winter, 1816
- origin, 5270
- picture, 5275
- related to carnation, 5270
- the family, 4111
- Pins and needles**, cause of feeling, 2456
- Pinxter-flower**: see Azalea
- Pinzon**, 258
- Pipe fish**, 210; pictures, 209
- Pipes**, briar wood, 5524
- bursting of water-pipes, 5524
- how they carry water, with pictures, 2105
- of Canadian Indians, 2774
- Pirates**, Blackbeard, 523
- Capt. Kidd, 525
- of Tripoli, 3533
- on coast of Africa, 4260
- Sir Walter Raleigh, 5393
- Pisa Cathedral**, Leaning Tower at, 303, 3018
- Leaning Tower, picture, 305
- Pisano, Andrea**, a sculptor; 1254, 4161
- Pisano, Niccola**, an Italian sculptor, 4161
- Pistil**, of a flower, 3736
- Pitch**, natural lake in Trinidad, 1878
- Pitcher-plant**, eats insects, 2842
- Pitchstone**, game, 5106
- a rock, 5198
- Pith sailor**, how to make, with picture, 3070
- Pitt, William**, 884
- Pitt, William**, the Younger, Act of Union passed by, 1096
- statue in Westminster Abbey, 1100
- story of him as a statesman, 2384
- pictures, 2379, 3705
- Pittsburg Landing**, battle at, 2013
- Pit-viper**, a family of snakes, 1380
- Pixies**, of Land's End, story, 1796
- Pizarro, Francisco**, assassination, 4504
- conquest of Incas, 4502
- extract from Prescott's Conquest of Peru, 6302
- founded Lima, 4574; pictures, 4501
- Plague**, Black Death in England, 750
- Black Death in Norway, 3594
- Great Plague of London, 1028, 1160, 5751
- how it affected places long ago, 1179
- how it came to Eyam, 625
- outbreak in Moscow, 3631
- picture, 1025
- plague-stricken (the) home, extract from, 5596
- Plagiodon foxus**, a kind of mud-fish, 2448
- Plaice**, 206; picture, 205
- Plains of Abraham**: see Quebec, battle of
- Planchette**, why does it move when we put our hands on it, 5578
- Plane**, how to use, and picture, 338, 339
- Plane-tree**, and picture, 3452
- Planets**, contain hydrogen, 2427
- how human characters were connected with them, 1940
- how the planets travel round the sun, picture 151
- how they are changing, 2283
- how they got their names, 2234
- how to find length of planet's year, 3762
- Kepler's laws of their motion, 3547
- law of gravitation, application to, 3761
- life on the planets, 3436, 3437
- move round the sun, 143, 1943
- move round the sun in an ellipse, 2424
- planets in their different sizes, picture, 2423
- raise tides on the sun, 2280
- satellites to the sun, 3032
- seven great planets circle round sun, 147
- shine by the light of the sun, 910
- supposed to influence men's lives, 2507
- the sun's family of worlds, 2423
- their distance from the sun, 150
- their paths in the sky, 2279
- their sizes compared, 1944
- why they do not fly off into space, 3674
- why they do not get in each other's way, 3095
- why we cannot get to other planets, 4119

INDEX

Plankton, what it is, 4824
Plantagenet kings, 2702
Plantain, how it spread in America, 3828
Plantain-eater, bird, 1748
Plant bug, picture in colour, face 3140
Plantin, firm of printers, 3464
Plants, a plant's wonderful secret, 227
 armoured, 4610, 4486, 4492, 4494
 eyes of a plant, 4213
 give out oxygen, 2077, 4748
 grown by electricity, 3689
 grown in the dark, 1134
 grown without soil, 2563
 habits of plants and flowers, 3949
 hidden names of, picture puzzle, 4999, 5114
 how manure makes them grow, 3973
 how the seed makes plant's colours, 4442
 how they are formed, 1131
 how they grow on a bare wall, 3438
 how they have to struggle for life, 3834
 how they live on air, 170, 285
 how they resist cold, 3094
 how they see and feel, 2796
 how they travel, 3827
 how to keep them cool and moist, 1074
 how to make a straight line for planting,
 with picture, 830
 how to plant and thin, 573
 how to plant out, 3278, 3616
 how to pot plants, 3826
 how to protect pot plants, 2254
 how to protect tender plants, with picture,
 2134
 how to repot, 234
 how to stake, with picture, 830
 how to transplant, 830
 how to treat pot plants, 3726
 in a sick-room, 1371
 insect-catching plants, 2097, 3533, 3541, 5030, 5031
 leaves of water and land plants, 4961
 necessary for life, 168
 need nitrogen, 3340
 of the seaside, 5185
 of two worlds, 4417
 parasitic, 3830, 4418
 poisonous, 4286, 4288, 4289, 4416, 4417, 4418, 4486,
 4488, 4490, 4494, 4495, 4616, 5438, 5626
 production of new varieties, 3483
 rock-loving, 4833, 5924
 sensitive plants, 4118
 stinging, 4290, 4292
 the families of plants, 4109
 the first living things, 169, 360, 4115
 the first plants, 167
 their importance, 63
 watering of, 927, 3278
 what a plant is and does, 3731
 what are these plants? puzzle, 5108, 5202
 where they get their salts from, 1987
 why some are poisonous, 3383
 why some plants are always green, 1778
 why they bear flowers, 38
 why they do better in pots with a hole in the
 bottom, 3433
 why they have Latin names, 4235
 why they sleep at night, 1265
 wonder worker (a) in, 3482

Pictures of Plants

grown in the dark and light, 229
 how they turn to the light, 2796
 insect-eating plants, 3541
 plants forming stars and rosettes, 3975
 plants that imitate others, 3831
 plants that stored up sunshine, in colour, face
 738
Plassey, battle of, 1094, 1704
Plaster of Paris, what it is, 1800
Plata, Rio de la: see Rio de la Plata
Platea, battle of, 5064, 5129
Plates, how they are made, with pictures, 4477
 how to support a plate on a pin, with picture,
 98
 vibrations of a plate experiment, 4916
 why a wet plate gets dry if left alone, 2505
Platinum, its specific gravity, 3816
 used in electric lighting, 658
Plato, Greek philosopher, 1306
 pictures, 1307, 4625

Plato, pupil of Socrates, 5129
 teaching in his open-air school, a picture,
 5510
 what he taught, 4617
Plato, a volcano in the moon, 2223
Platt, John James: see Poetry Index
Platypus: see Duck-billed platypus
Play, why it is good for children, 3566
Playfair, Lord, scientist, 854
Playgrounds, in New York City, 3198
Plays, Robin Hood, 5522
 When did you last see your Father? 5531
Plaza, the, picture, 5182
Pleasure, why do we get excited when pleased,
 5383
Plebeians, oppressed by Patricians, 5261
 the lower classes of Rome, 414
Pleiades, constellation, scientific name for the
 Seven Sisters, 1270
 how to find them in the sky, 2612
 legend of the Pleiades, 3314
 picture, 2617
 what the stars represent, 4518
Plesiosaurus, fish-lizard, pictures, 44, 49
Plimsoil, Samuel, bill regulating loading of
 ships, 685, 1574
Pliny, historian, wrote about amber, 2113
Pliny the younger, letter describing the de-
 struction of Pompeii—an extract, with pic-
 tures, 5314
Plough, an implement, why it is used, 248
 how it is used, 4082
 improved, 2668
 pictures, 248, 4082
Plover, bird, 1518, 1630
 golden, 1518
 pictures, 1517, 1959
Plum, grows best on English soil, 650
 how it is formed, 2075
 how its fruit is made up, 4110, 4344
 new varieties of, 3486
 plums growing, picture in colour, 650
Plums-thistle, dwarf, 4424
 picture, 4419
Plymouth, Massachusetts, 1022
Plymouth Colony, 516, 518, 525
 its lands called New England, 539
Plymouth Company, 518, 539
Plymouth Sound, and breakwater, picture,
 4436
Po, a river of Italy, 2960, 3012
Poacher's silence, story of, 3660
Pocahontas, 4533
Pocket-gopher, 672; picture, 667
Pocket-handkerchief, handkerchief through a
 microscope, picture, 2324
 how to embroider, 1507
 the wizard's pocket-handkerchief, trick, with
 pictures, 2488
Poe, Edgar Allan, life, 1482
 memorial to, 4849
 poems: see Poetry Index
 portrait, 1475
Poet, four great English poets, 3327
 how he thinks, 4944
 the poet, the goblin, and the donkey, legend,
 2377
Poet Laureate, his work, 1883
Poetry, capping verses, game, 5113
 different kinds of verse, 343
 earliest English poetry, 469
 how to read, 699
 how to remember, 821
 our feelings in poetry, 1557
 poetry of action, 1121
 poetry of common things, 1273
 poetry of Nature, 2192
 poetry of youth and manhood, 1031
 the music of words, 93
 the poets and childhood, 921
 what dramatic poetry is, 93
 why we should read poetry, 563
 For poems and authors of poems, see special
 Poetry Index, and names of authors
Poet's narcissus, 5272
Pogonia, sweet, 3050
Pointer, a dog, and picture, 503
Poison, arsenic in wall paper, 5575
 can metals be poisoned? 5486

Poison, causes spasms, 4440
headache-powders, 5643
how poisons act, 4597
how to treat cases of poison, 5110
in animals, 5021
in mushrooms, 4752
in plants, 3383

See also **Plants, Poisonous**

Poison-ivy, 4494
berries, 4493
Poitiers, battle fought at, 750
town in France, 2399
Poker, why water crackles when a red-hot
poker is put in it, 3095
Poker-work, how to do, 1280
Pola, a naval port of Austria, 2860
Poland, became a Russian province, 3632
invaded Russia, 3628
its many changes, 2852
King becomes King of Bohemia, 2852
Poles settled in Galicia, 2852
seized by different rulers, 2578, 3631
troops with prisoners, picture, 2850
united to Lithuania, 3626
war with Sweden, 3596
wars with Turkey, 2528, 2850, 3154, 3158
Polar bear, its habits, 141; picture, 138
why it is white, 3410
winter sleep of, 6296
Polar exploration, accounts of various expedi-
tions, 4719
finding the South Pole, 5051
men who searched for the Poles, 4725
Mount Erebus, face 4719
Peary's discovery of North Pole, 5212
Peary's route, 4721
regions round the Poles, 4719
Shackleton discovered South Magnetic Pole,
4438
Shackleton's expedition, 4728
the world around the Poles, 4719
various expeditions and scenes, 4723
Polarisation of light, 5173
Polders, drained marshes in Holland, 3456
Pole, Cardinal Reginald, 845
Polecat, 140; picture, 137
"Pole" star, guides the sailors, 2235
has changed its position, 4438
how to find it, 2612
pictures, 152, 2611, 2613, 2617
Police, Royal Northwest Mounted, 4577
why those of London are called "bobbies"
and "peelers," 5382
Political Parties, Canadian, 1330
Family Compact, 746
Political Parties, United States, Abolitionists,
2008
Constitutional Union Party, 2010
Democratic split, 2010
Democrats and Republicans, 1394
Republican Party, 2009
Tories and Whigs, 984, 1830
Polk, James K., administration, 3535
as president, 1830
picture, 3532
Pollen, bee taking pollen, picture, 3732
carried by insects, 1265, 2826
carried by the wind, 33
how it pierces the pistil, 3736
use in fertilisation of flowers, 3484
what it is, 45
Pollux, a star, 2614; picture, 2617
Polo, Marco, explored China, 110
his adventures, 54; pictures, 55
his walk to China, 3938
wrote about Japan, 365
Polyanthus, how it is produced, 5271; picture,
5277
when to plant, 1716
when to transplant, 830
Polyanthus narcissus, 5272
Polycletus, a great sculptor, 4160
Polydorus, a sculptor, 4166
Polygala, fringed, 3051
Polyneices (not Pobyneices), his sister's sacri-
fice, 468
Polynesia, part of Australasia, 1466
Polyphemus, a one-eyed giant, 69
Polyps, pictures, 2334, 2637

Pomerania, claimed by Sweden, 2528
Pompeii, art treasures in the Naples Museum,
6142, 6144
buried nearly 20 feet deep, 6144
destruction of, with pictures, 422, 1263, 5268,
5314
faithful unto death, picture, 1263
garden then and now, picture, 6145
house as it was and as it is, picture, 6143
how an egg was found unbroken, 6144
how the city was sealed up, picture, 6139
its architecture, 6138
mosaic of dog, picture, 6138
preservation of victims, 6138
restoration of ruins, 6137; pictures, 6140
ruins of city, pictures, 422
wall-paintings found at, 4585
why it is a remarkable ruin, 6138
Pompey, flight from the battlefield, picture, 412
history of, 5705
rise to power, 417
Ponce de Leon, 258
Pondicherry, French factory at, 1702
Pont-Grave, establishes trading-post at Ta-
doussac, 537
Pontifex Maximus, chief of the Roman priest-
hood, 2631
Pontypridd, its bridge, 19
Pony, means of communication of, 5328
Poor, the treasure of the, story, 2742
Pop, origin of the word, 2227
Pope, Alexander, a famous writer, 2540
his life, 3904; portrait, 3907
what he said of Nature, 3240
Pope, General, at second battle Bull Run,
2016
Pope, became powerful, 2524, 3014
disapproved of the freeing of Italy, 3024
disputed with Christian rules, 2526
head of the Western Church, 3150
how Henry VIII. overthrew the pope's power
in England, 2708
the pope who ran away, story, 459
Poppun, how to make from elder, with picture,
3070
how to make from quill, with picture, 4890
what it is, 2227
Poplar, catkins of, 2835
tree, pictures, 3190
white, or yellow: see Tulip-tree
Popocatepetl, 4386; picture, 4381
Poppaea Sabina, Nero's wife, picture, 530
Poppy, an annual, 233
California, improvement by Burbank, 3483
horned, description, 5190, with picture, 5187
must not be transplanted, 3278
scarlet, 4616, with picture, 4613
the poppy family, 4110
Poppy anemones, 5270
Population, its increase, 1644

See also under **Various Countries**

Porcupine, 1068
pictures, 51, 671
what kind of animal it is, 669
Porcupine grass, name for spinifex, 1364
Pork, production of in U. S., 2658
Porpoise, what kind of animal it is, 1083
Porsena, king of the Etruscans, 3884
Portage la Prairie, included in Manitoba, 1246
Port Arthur, in China, 3753
town on Lake Superior, 212
Port Darwin, town of South Australia, 1360
Port Said, 5813
Porteous, John, hanged by a mob, 1759
Porter, Anna Maria, wrote novels, 2595
Porter, David, commander of the Essex, 2902
Porter, General, picture, 2017
Porter, Jane, novelist, 2594; portrait, 2593
Portinari, Beatrice de, Dante's love for, 5219
Port Jackson, convict settlement, 1356
Portland Harbour, picture, 4434
Porto Novo, king presiding over council, pic-
ture, 4261
Porto Rico, history and description, 2188
purchased, 3538
West Indian island, 1877
Port Philip, a town in Victoria, 1358
Portrait, making an outline, 5621

- Port Royal**, captured, 540
town settled, 537
- Port Royal, S. C.**, 262; captured, 380, 2014
- Portsmouth**, harbour, picture, 4434
- Portugal and Portuguese**, African possessions, 4262
Columbus and the king, 56
connection with Brazil, 4506, 4568
expedition to Canada, 535
explorers, 3354
French driven from Portugal, 2276
gives Bombay to Charles II., 4036
history and geography, 3351
in Hawaii, 2152
master of the Indian Ocean, 4035
Portuguese driven from Ormuz, 3880
Portuguese in China, 112
route to Japan discovered, 366
trade with India, 1702
- Portuguese East Africa**, native village, picture, 4259
- Portuguese man-of-war**, sea nettle, 2341
pictures, 2334, 2337
- Porus**, king of India, 1306, 1700
- Positive electricity**, what it is, 2115
- Positivism**, a religion, 5249
- Postage**, how our letters come to us, with pictures, 3321
reduced, 3537
why letters have to be stamped, 4116
- Postcard**, how to pass through a postcard, with picture, 3518
- Postel, William**, life of, 5470
- Posting**, game, 4027
- Post Office Department, The U. S.**, 1596
- Posture**, game, 1614
- Potash**, what it is, 2506
- Potassium**, its specific gravity, 3816
- Potassium chloride**, how to form, 1801
- Potassium sulphate**, what it is, 1801
- Potato**, contains much water, 1172
how to dig up, 3826
how to grow, 3176, 3514
how to store, 4353
used for making alcohol, 1872
why it does not rot, 4119
- Potatoes**, first grown in Ireland, 5394
great crop of United States, 2422
- Potato spirit**, causes death of African natives, 1872
- Potato woman and her pig**, how to make, with picture, 1079
- Potential energy**, what it is, 3552
- Potiphar**, Joseph's master, 2910
- Potosi**, silver mines, 4504, 4572
- Potsdam**, city in Prussia, 2748
- Potter, Edward C.**, sculptor of animals, 4846
- Potter**, how he works, with pictures, 4477
- Pottery**, made by the Greeks, 5126
- Poultry**, production of, in U. S., 2653
- Poultry-keeping**, as a hobby, 4671
- Pounds, John**, how he taught poor children, with picture, 3790
- Pouter pigeon**, 2215; picture, 2213
- Poutrin-court**, brings over colonists, 537
- Powell-Cotton**, Major, hunt for okapi, 1000
- Powers, Hiram**, sculpture of, 4842
- Powhatan**, 4534
- Prague**, capital of Bohemia, 2576, 2858
- Prairie-chicken**, Western grouse, or, 1518
- Prairie-dog**, habits, 670; picture, 667
dwelling, 5416
- Prairies**, plains of North America, 3075
- Prascovia**, how she saved her father, 2368
- Prawns**, French prawn-fisher, picture, 2395
prawn, picture, 2535
what they are like, 2587
- Praxiteles**, sculptor, 4160
- Prayer wheels**, used in Tibet, 3938
- Praying mantis**, 3263
pictures, face 3140, in colour, 3259
- Precipice**, picture, 408
- Precipitate**, how it is formed, 1668
- Pressburg**, old capital of Hungary, 2576
- Presbyterianism**, Scottish Church, 1889
- Prescott, William Hickling**, capture of the Inca, an extract, 6302
- Present** for a man, useful, 5897
- President (The)** of the United States, his powers, 1595, 1596
- Presidents of U. S.**, administrations of the several, 3533
five famous, 787
homes of, 2420
- Pressburg**, old capital of Hungary, 5712
- Press-gang**, 6234; picture, 2027
- Presstel, John**, an artist, 5694
- Pressure**, fluid pressure, 3946, 3948
the different kinds, 3941
- Preston-Fans**, battle of, 1498
- Priam**, king of Troy, 67
- Priest's tale**, in The Canterbury Tales, 438
- Primogeniture**, what it means, 3763
- Primrose**, 4610; with picture, 4612
bird's eye, 5038; picture, 5035
how to grow, 830
- "Primrose Day"**, anniversary of Disraeli's death, 2388
- Prince**, prince's five servants, story, with pictures, 4270, 4271
who gave up his freedom, story, 3168
who was poor, story, with pictures, 2369
- Prince Albert**, Canadian town, 5368
- Prince Edward Island**, 216, 220
becomes a province, 745, 1247
description, 5604
minerals in, 5599
refused to enter confederation, 1244
school children in, 5233
- Prince Finikin and his mamma**, poem, and picture in colour, 3844
- Princes in the Tower**, 756, 1980, 4638
picture, 1981
- Prince's Island**, village, picture, 4259
- Princess and King Grislybeard**, story, with picture, 1189
search for the real princess, story, 324
princess's golden ball, story, with pictures, 1316, 1317
princess who became a goose-girl, story, with picture, 2492
silent princess, story, with picture, 4797
strange adventures of a princess, Canterbury Tale, 439
- Printing**, carried on in Holland, 3463
fancy lettering, and pictures, 4879
men who gave us printing, 3567
of this book, with pictures, 891
what type-metal is made of, 1870
- Priores's tale**, in The Canterbury Tales, 443
- Prism**, what it is, 5041
- Prisoner's base**, game, with picture, 3920
- Privateers**, Alabama (The), 2015
American, in 1812, 1399
Sir Francis Drake, 266
substitutes for war vessels, 2897
- Privet hawk moth**, its life-story, 2986
picture in colour, face 2982
- Proboscis monkey**, 606; picture, 605
- Procopius**, a writer, 3152
- Procter, Adelaide Anne**: see Poetry Index
- Procter, Bryan Waller**: see Cornwall, Barry
- Proctor**, defeated, 746
- Procyon**, star, 2614; with picture, 2617
- Proserpine**, queen of underworld, story, 5316
- Protective colouring**, in animals, 1776
- Protective mimicry**, among animals, 3407
- Protector**, name for Cromwell, 1025
- Proteids**, how they rebuild the body, 2699
- Protestants**, persecuted in France, 2394
persecution in Great Britain, 2534, 5067
persecution in the Netherlands, 3460
what they are, 2527
- Proteus**, the, Greely's ship, 5214
- Protoplasm**, how it breathes, 1633
what it is, 1103, 1181, 4597
will probably be made by chemists, 4120
- Protoplasmic poisons**, what they are, 4597
- Protractor**, how to make, with picture, 445
- Proverbs**, games, 2137, 5202
- Proverb Stories**, 5654
- Providence**, 520
- Providence, the**, ship under Paul Jones' command, 2898
- Prussia**, became great, 2579
enlarged its territory, 2578
interfered with the Netherlands, 3463
king proclaimed German emperor, 2277, 2580
kingdom in Germany, 1640, 2530
wars with Napoleon, 2530, 2575
Wupper Valley railway, picture, 91

Frussian blue, how it is made, 4508
Frussian carp, picture, 2679
Frussic acid, how it affects the blood, 1338
 how it is formed, 1797
 its graphic formula, 1798
 why it is called weak, 1801
Psyche, legend of, with picture, 1902, 1903
Psyche moth, 2993
Pyarmigan, 1518, 3408; pictures, 1517, 1777
 American, 1518
Pterodactyl, flying reptile, picture, 44
Ptolemies, Egyptian kings, 4790, 5703
Ptolemy, quarrels with Cleopatra, 5705
Ptolemy, Claudius, astronomical studies, 1656
Public baths, and swimming, 3199
Public Utility Industries, disputes, 4093
Publius Valerius: see Valerius, Publius
Puddingstone, stone, with picture, 5197
Pueblo, taken by the United States, 4390
Pueblo Indians: see Hopi, the
Puff-adder, 1380; picture, 1379
Puffballs, edible, 4754
Puffin, bird, 1632; picture, 1631
Pugachev, led Russian insurrection, 3629
Puget, Pierre, sculptor, 4162
Pullman, George M., as inventor, 2669
Pulse, how Galileo measured the pulse, 1658
 how it tells temperature, 3972
 position at wrist, picture, 1580
 what it is, 3971
 what it tells us, 4344
 why it beats, 1580
Puma, animal, 140; picture, 136
Pumice-stone, what it is, 3034, 3229
 why it removes stains, 3095
Pump, how it works, 2112, 3947; picture, 2112
Pumping-engines, use, with picture, 2108
Punch, rock, with picture, 1058
Punch and Judy, in an old-time village, picture, 193
 story of, with picture, 1907
Punctuation, amusements with stops and commas, 5668
 mistakes caused by wrong, 5668
Puncture, how to mend a tire, 4249
Punic wars, 5262
Punjab, conquest by the British, 1706
 conquest by the Greeks, 1700
 its meaning, 1546
Punning, case of association of ideas, 4941
Puno, port of Peru, 4572
Punta Arenas, town, 4572
Pupae, sort of chrysalis, 43
Pupin, M. I., as inventor, 2670
Puppy, and the cat, story, 604
Purcell Mountains, part of Selkirks, 5607
Puritans, colonisation by, 518, 4036
 origin of name, 516
Purple, dye made by Phoenicians, 5122
 how it is made, 1935, 4508
Purple emperor, butterfly, 2992
 picture in colour, face 2982
Purple heron, 1954; picture, 1950
Purple loosestrife, used as a tonic, 4964; with picture, 4964
 what it is like, 4966
Purple molinia, grass, picture, 1342
Purse, conjuring tricks, with pictures, 2566, 3068
 how to make in crochet, with picture, 4028
Puss in Boots, story, with picture, 1104
Puss in the corner, game, 2571
Puss moth, and caterpillar, 2991, 3416
 pictures, face 2982 in colour, 2991
Putnam, Israel, 884, 984
 portrait, 985
Putting on the donkey's tail, game, 5000
Puzzle picture, how many people can you find, 5916
 what are these boys and girls doing, 6006, 6060
Puzzles, answers to, 5530, 6062
 mysterious cubes, 6063
 mysterious (the) Jacob's ladder, 5667
 shadow game, 5893
 to form a square, 5666
Pydna, battle of, 5264
Pygmalion, his statue of Galatea, 962
Fym, John, opposed Charles I., 1024, 1894
 portrait, 1896
Fynson, Richard, printer, 3574

Pyramids, battle of the, 4258
 built from nummulites, 2336
 Great Pyramid, 4779, 5004, 5818; pictures, 4783, 4782, 5007, 5815
 how their story was lost, 2802
 of Gizeh, 5004; picture, 4783
 their building, with picture, 4780, 4792
 their object, 4780
 view of them from Cairo, 5814
Pyramids, game, 5106
Pyrenees, separate France from Spain, 2392, 3353; their extent, 4497
Pyrrius, fought against Rome, 2002, 5262
Pytheas, geographer, 5124
Pythias, his friendship for Damon, 626
Python, 1374; pictures, 51, 1375

Q

Quail, a partridge, 1520; picture, 1517
 description, in Canada, 3038
Quakers, 5835
 beliefs of, 521
 brave little Quakeress, 4531
Quaker's stroke, story, 1054
Quaking grass, picture, 2978
Quarry, picture, 2831
Quartz, where it is found, 4246
Quatrain, what it is, 343
Quatre Bras, battle of, 4364
Quebec, a capital of Canada, 212, 216, 218, 1242
 appearance of, 5423
 attack upon, 743
 battle of, 219, 540, 880, 885, 984, 1094
 Champlain, statue of, picture, 2248
 colony and changes of owners, 216, 538
 its French citizens, 5869
 Parliament Buildings, 1329
 scenes in, picture, 1243, 5871, 5874
 settled, 536
 supplies destroyed by English fleet, 538
Quebec, Province of, created, 1244
 divided into Upper and Lower Canada, 745
 education in, 5233
 Legislative Council of, 1328
 minerals in, 5599
Quebec Act, 742
Queen, a queen's farewell to France, picture, 347
 the death of a, 5502
 uncrowned American, 4907
 who gave up her boy, story, 1654
 who hid by night, story, 4538
 who was turned away, story, 4642
Queen Anne's War, 880
Queensland, 1360
Quetzal, bird, 1748; picture, 1736
Quiberon Bay, battle of, 1094
Quicklime, what happens when water is added, what it is, 1669, 4338
Quicksands, what they are, 3971
Quicksilver, what is quicksilver? 154
 why does it run away when we touch it? 154
 why does it roll into little balls? 154
Quill, poggum from, with picture, 4890
Quill pens, use of, with picture, 3401
Quintianus, governor of Sicily, 1013
Quintus Cicero, his death, 4071
Quirinal Hill, 5260
Quito, where it is, 4505, 4574
Quoits, garden, how to play, 3614

R

Rabbit, behaviour of young, 5479
 dwelling, 5414
 how to keep rabbits, 452
 life-story, 384, 2099, 2328
 pictures, 51, 249, 383, 453
 the different kinds, 504
Rabbit-hutch, with picture, 454
Raceme, 5269
Racket-tailed humming-bird, 1745
Raccoon, animal, 864; picture, 865
Radiant energy, 5039

- Radiant heat**, comes from the sun, 1061
its laws, 4320, 5039; its rays, 5176
made of waves in the ether, 1421
the rate at which it travels, 4180
- Radiation**, conditions for radiation, 4321
conveyed by ether, 4180
heat travels by radiation, 1061
what effect it has, 581
- Radiation pressure**, 1776, 2497, 3840, 5040
- Radicles**, the parts of a salt, 1801
- Radio-active elements**, 4322
- Radiolaria**, picture, 2340
- Radishes**, how to sow, 719, 2971, 3278
- Radium**, aid in building mountains, 3227
could change climate of North Pole, 4115
found in products of volcanoes, 3229
found in the sea, 2619
has wonderful properties, 544, 1295
how it makes heat, 637, 2621, 4322
is an element, 1372
made from uranium, 1419
may help to keep sun warm, 426
- Raffia**, making a basket of, 5456
- Raffia tape**, good for tying plants, 719
- Raft-spider**, 3304; picture, 3299
- Rags-and-tatters**: see Mallow, common
- Ragwort**, flower, 4188; picture, 4184
- Raid**, of the witches, story, 815
- Raikes, Robert**, why he started Sunday schools, 3704; picture, 3701
- Rail**, a bird that runs well, 1958
- Railton, Wm.**, made Nelson Column, 1166
- Railwaymen**, brotherhoods of, 4092
- Railways**, a lighthouse railway in the air, 741
built up from squares, and picture, 1818
Canadian, 2261
Cape to Cairo railway, 4262
cliff railways, picture, 6065
colour pictures, 294, 295
electric, invention of, 4450
first to run in England, pictures, 611
first transcontinental, 3537
former gauge of Grand Trunk, 2261
gauge of Prince Edward Island railways, 2262
gyroscope train: see Mono-rail system
how a train keeps on the rails, with picture, 918, 3973
how the engine works, 289
how the train was saved, story, and picture, 4957
importance in the U. S., 2665
improvements on, 2670
in central Asia, 3932
men who made the railways, 609
pictures, in colour, 289, 294
prehistoric cutting in Mexico, with picture, 4387
Prince Edward Island, 2262
scenes along the Canadian Pacific Railway, pictures, 2263
showing space between rails, 4369
speed of walking in a train, 777
started in England, 1096
stopping a train, 5166
the earliest railways in England, 615
the first in America, 609, 1828, 3534
the first railway, 614
the first railway engine, 612
the second railway made, 613
toy railway for garden, and pictures, 3610
tube railways, 616
why a railroad has little white posts, 5962
why fields appear to move, 4750
why smoke seems to go other way, 1866
why the pitch of the whistle varies, 2717
- Railway signals**, their colours, 4509
- Rain**, a rainy day, pictures, 1859, 3429
British Guiana has heaviest rainfall, 1878
forms drops, 624, 4339
freshens the air, 1859
has two acids, 2622
how it melts rocks, 2621
it can snow and rain together, 2073
raindrops heavier than snowflakes, 3036
smoke down chimneys a sign of, 5166
speed of raindrops, 3672
the first rain, 167, 360
what becomes of it, 3429
why is it sometimes heavy? 5384
- Rain**, why it falls, 406
why it is not salt, 2235
why it rains more in winter, 3240
why Scotland is so rainy, 8094
- Rainbow**, cannot be seen on both sides, 1642
how it is made, 1859, 5041
picture in colour, face 1858
- Rain-gauge**, with picture, 2969, 2970
- Rajah**, a prince, 1552; picture, 1701
- Rajpoots**, warriors of the Aryans, 1699
- Raleigh**, capital of North Carolina, 5984
picture, 6135
- Raleigh, Sir Walter**, attempt to found colony, 267, 4036, 6131
expedition to America in 1584, 6131
friend of Elizabeth, 846
gave Virginia its name, 1021, 6131
life and imprisonment, with pictures, 5393
pictures, 843, 3329
poem: see Poetry Index
portrait, 261
sends colonists to America, 6132
sought for gold-mine, 4505
used pitch from Trinidad, 1878
when he lived, 2535
- Rameses II.**, oppressed the Israelites, 4787
pictures, 4779, 5007
- Ramilles**, battle of, 2530
- Ramsay, Sir William**, and aurora borealis, 5252
theory of smell, 4628
- Randall, James Ryder**, author of Maryland, My Maryland, 2957
- See also Poetry Index**
- Rands, William**: see Poetry Index
- Ranger**, the, war-ship, and the Drake, 2898
- Ranunculus**, garden varieties, 5270
- Raphael**, a great painter, 757
buried in the Pantheon, 5267
helped to design St. Peter's Church, 3018
his picture of Plato and Aristotle, 1307
his picture of the Child Jesus, 761
his work as a painter, 4586
paintings on walls of Vatican, 4951
picture of school of Athens, face 1301
picture of the Madonna and Child, 4589
pictures, 759, 4945, 4947, 4955
story of his life, 4952
worked with Fra Bartolommeo, 2790
- Rapunzel's golden ladder**, story, and picture, 2306
- Raspberry**, flowering, description, 4839
how its fruit is made up, 4110
pictures, 651, 4837
requires much water, 3514, 3726
- Rat**, fondness for great valerian, 4970
its life-story, 769
pictures, 51, 771
- Rat-bat**, name for a bat, 769
- Ratisbon**, an interesting town, 2754
famous temple near, 2755
- Rats**, communication between, 5328
- Rat's tail**, name for chain knot, 236
- Rattler**, a warship, and picture, 2471
- Battlesnake**, its life-story, 1380; with picture, 1379
lives with marmots, 670
- Raven**, 1846, 3408
pictures, 51, 1744, 1847
- Ray**, fish, 2448; picture, 2449
- Rayleigh, Lord**, on light, 4510
- Raymond**, count of Toulouse, 1587
- Razor**, the sharp edge, through the microscope, picture, 2324
- Razor-bill**, bird, with picture, 1630, 1631
- Razor-strop**, from mushroom, 4753
- Reaction**, in chemistry, 1669
- Read, T. Buchanan**: see Poetry Index
- Beade, Charles**, his book, The Cloister and the Hearth, 4017
life, 2314; portrait, 2307
- Reading**, town, 592
- Reading**, a first lesson in grammar, 1447
different kinds of pronouns, 3129
how to learn little words, 725
little words of four letters, 365
making new words from old ones, 2409
more about verbs, 3369
more pronouns and verbs, 3287

Reading, primary lessons, based on nursery rhymes, 485, 1207; picture, 486, 727; picture, 728, 967; picture, 968; picture, 1208, 1408; picture, 1452

the difference between one and two, 1685

the difference between subject and object, 2169

the meaning of words, 1929

the verb and its moods, 3423

the words that describe things, 2649

words of two syllables, 1205

words used in the place of nouns, 2889

Reaping machine, invented, 1828, 2668

Reason, for everything, 5248

the value of it, 510

Rebate, in wood work, 1346, 1923

Receptacle, of a flower, 4110

Reciprocity, treaty of reciprocity between Canada and the United States (1854), 1242

Recorde, Robert, astronomer, 1657

Recreation piers, in New York, 3199

Rectangle, what it is, 5248

Rectum, is part of the bowel, 2345

Reculvers, an old Roman castle, 193

Red, a primary colour, 4508

what happens when we see red, 4507

Red admiral butterfly, pictures face 2982

Red ant, in chrysalis stage, picture, 2945

Red bartsia, picture, 5188

Red cardinal, picture, 2055

Red cross badge, its origin, 2968

Red daisies, the land of the red daisies, story, with pictures, 708

Red dead nettle, picture, 4290

Red deer, 382; picture, 381

Red-faced spider monkey, 605

Red goose, name for the flamingo, 1958

Red-hot poker, flower, 5272; picture, 5279

Redpoll, egg, picture, 1744

in Canada, 3491

Red rattle, lives on other plants, 3830

Red Riding Hood, story, and picture in colour, 2140

Red Riding Hood dolls, how to make, 341

Red River, included in Manitoba, 1246

Red Sea, is the short cut to India, 4252

Redstart, bird, 2057; picture, 2055

Reduction, in chemistry, 1195

Red underwing moth caterpillar, 3413

Reduvius personatus, an insect, 3416

Redwing, bird, 2058

Reed, Major Walter, helped to conquer yellow fever, 3200

Reed, used for writing, 3399

Reed bunting, 2057; picture, 2059

Reed canary grass, picture, 1343

Reed grass, picture, 2981

Reed mace, 4966; picture, 4963

Reed sparrow, nest of, picture, 5785

Reed warbler, 2057; pictures, 1744, 2053

Reef knot, how to make, with picture, 235

Reeve, the female of the ruff, 1958

Reflection, how it is made, 3434

in water, pictures, 3435

not shadow, 5524

the laws of reflection, 5177

throws back light, 5642

water can reflect from a distance, 3034

Reflex action, what it is, 2878, 4444, 4745

Reformation, in England, 2708

its history, 4948

the martyrs of, 5067

upheld by the Netherlands, 3460

Reformers, some famous reformers, 3697

Refraction, effect it has on our sight, 581

the breaking of light, 2230, 2319, 5177

when a stick is thrust into water, 5685

Regina, as a territorial capital, 1247

capital of Saskatchewan, 5368

Regnard, Jean François, traveller, 769

Regulators, 982

Regulus, going back to Carthage, picture, 417

his sacrifice for Rome, 414, 5262

how he went back to die, 5511

Reichstag, German parliament, 2580

Reign of Terror, in France, 1141, 2272

Reindeer, introduced into Alaska, picture, 2180

lived in this country, 192

picture, 275

useful to Laplander, 277, 3601

Reis, Philip, made a telephone, 4317

Relief, in sculpture, 4159

Religion, early leaders of the Church, 4707

in Canada, 3782

in the British Empire, 4039

of Canadian Indians, 2561

some founders of religions, 2995

Rembrandt, a great painter, 760, 4387

his portrait of his daughter, 702

pictures by, 4585, 4591; portrait, 759

Remigius, bishop, 2064

Remus, brother of Romulus, 5260

Renaissance, in Italy, 3156, 3328, 4161

Rennet, makes milk solid, 2792

Rennie, John, bridge-building, 19

Repeater watch, tells time in the dark, 1536

Reptiles, at one time masters of the earth, 662

prehistoric reptiles, 46

skeleton, picture, 3675

the oldest animals, 1217

various kinds, pictures in colour, 1225

what they are, 661

See also Lizard; Brontosaurus

Republic, steamer, wreck, 3524

Republicans, 1394

Resaca de la Palma, battle of, 1832

Reservations, for Canadian Indians, 2776

Reservoir, Ashokan, 5115

construction, with picture, 2104

Kensico, 5115

the Nile, 5399

Resonators, effect on sound, 909, 4076

of the voice, 4916

what the tuning of resonators is, 4915

what they are, 3756, 4597, 4914

Respiration, a name for breathing, 1633

Rest, a state of balance of forces, 3470

how a thing is kept at rest, 3672

Rest-harrow, plant, 4111

Resurrection plant, 1677, 2563, 2564

Retort, used for making gas, 393

Retriever, a dog, 502; picture, 501

Reuss River, is a tributary of the Aar, 2964

Revenge, ship that fought off Spaniards, 4205, 5395

Revere, Paul, the famous ride, 983

Revolution, The American, 977

effect on Canada, 743

how the colonies were lost, 1094

Paul Jones during, 2897

story founded upon, 4281

two spies of the, 3811

See also Battles, United States history, Washington

Reynolds, Sir Joshua, a painter, 764, 4587

famous men at his house, picture, 4099

pictures, 762, 4592

Rhacoporus, a toad, 1224

Rhampsinitus, treasure of, story, 1906

Rhea, bird, 1426; picture, 1429

Rhine River, its course, 2960, 3455

its size, 1984, 2521

Rhinoceros, education of young, 5481

how captured, 6148

its life-story, 996

pictures, 51, 994

Rhodanthe, a lady of Greece, 190

Rhode Island, colony of, 520

Rhodes, Cecil, 1770, 4262

Rhodes, Colossus of, picture, 908

Rhodes, settlement by Spartans, 5124

Rhodesia, in South Africa, 1766, 1768, 1770

Rhone River, 2394, 2960

Rhubarb, how to grow, 3176, 3514, 3726

Rhyme, what it is, 93

Rhymes, a game, 237

game of making, 5448

Rhythm, what it is, 699

Ribbon-fish, a sea-fish, 2451; picture, 2449

Ribbon-work, cushion-cover, with picture, 3286

table-square, 2133

Ribs, bind the chest, 1580

Rice, Mrs. Alice Hegan: see Young, Mrs. A. H. R.

Rice, its value as food, 2925

picture, 2923

used for bread, 1144

Rice fields, in Philippines, picture, 2183

Richard I, of England, 5943

- Richard I.**, fought with Robin Hood, 2605
how he forgave his enemy, 2001
in the Crusades, 596, 1589, 2704, 3878
pictures, 1587, 1592
prisoner, 2533
ransom used to build walls of Enns,
- Richard II.**, of England, 752, 2704, 2852, 5944
resigning the crown, picture, 751
- Richard III.**, of England, murder of little
princes, 1980, 4638, 5946
reign, 756
- Richard**, duke of York, slain, 2533
was murdered with his brother, Edward V.,
1980, 4638
- Richard**, grandson of Rollo, his escape, story
and picture, 5223
- Richard**, the Fearless, 434
- Richardson, S.**, life, 1728; picture, 1725
- Richborough**, an old Roman castle, 198
- Richelieu**, Cardinal, 2070
- Richmond, Va.**, capital of Virginia, 5983
made capital of the Confederacy, 2012
picture, 5892
point of attack, 2013
- Richmond Hill**, legend, 1983
- Rickshaw**, in Japan, 5560
- Ride**, a girl's desperate ride, story, 2803
a woman's ride in the sea, story, with picture,
4069
- Rideau Canal**, picture, 4095
- Rideau Hall**, in Ottawa, picture, 2562
- Rideau Lakes**, Canada, 6184
- Ridley**, Nicholas, bishop, died for his faith,
5068; picture, 5069
- Rienzi**, Cola di, led Roman citizens, 3020
- Riel**, Louis, leader of rebellion; execution, 1246
- Riel Rebellion**, its cause and suppression,
1246
- Rifle**, how it fires twelve bullets, picture, 5800
- Riggs, Mrs. Kate Douglas Wiggin**, life, 2049
- Right-handed**, why we are, 3775
- Right whale**, 1084
- Rigi**, Mount, has a hotel at the top, 2960
- Riley, James Whitcomb**: see Poetry Index
- Rinehart, William H.**, sculpture of, 4844
- Ring and coin**, trick, with picture, 1198
- Ring-dove**, 2214; picture, 2213
- Ringed plover**, 1780
- Ringed snake**, 1378; picture, 1381
- Rings**, fairy, of mushrooms, 4751
- Ring-taw**, game, 5106
- Rio de Janeiro**, harbour, picture, 4570
in Brazil, 4506, 4568
- Rio de la Plata**, an estuary, 4500
useful for commerce, 4568
- Rio Grande del Norte**, 4381
- Rio Tinto**, has famous copper mines, 3360
- Rip van Winkle**, the story of his adventures,
with pictures, 4695, 4800
- Rivers**, appear still because they are deep, 1576
are a little salt, 1270
are affected by the moon, 3091
pictures, 409, 408, 2103
river under a city, 5115
their course depends on the land, 1989
why the beds of rivers change, 1992
why they are always moving, 5024
why we cannot see the bottom, 1060
- Riviera**, 2398, 3650
- Rizzio, David**, was murdered, 3088
- Rizzo, Antonio**, an architect, 1254
- Roach**, a fish, 2681; picture, 2679
- Roads**, McAdam's improvements, 158
made by Romans, 270
made high in the middle, 158
why the sides meet in the distance, 1578
- Roanoke**, lost colony of, 941, 6131
- Roanoke Island**, 5984
- Robber and the monk**, 6201
- Robber**, who saved a queen, picture, 755
- Robbers**, and the soldiers, trick, with picture,
2766
- Robert**, duke of Normandy, his life, 1587
- Robert I.**, the Bruce, king of Scotland, 120, 748,
3082; pictures, 3081
- Robert II.**, king of Scotland, 3084
- Robert III.**, king of Scotland, 3084
- Roberts, Charles G. D.**, life-work, 4302
- Roberts, Lord**, his march from Kabul to Kan-
dahar, 3988
praised the Sikh, 2548
- Robertson, James**, 1822
- Roberval, Seigneur de**, given the right to set-
tle in Canada, 536
- Robespierre, Maximilien**, 2274, 4062
pictures, 4053, 4061
- Robin**, American, 3496
its life-story, 2054, 2061, 2328
nests of, 5779
pictures, 1744, 2053, 3893
the winter, 3491
- Robin Hood and his merry men**, 5522
the story, and pictures, 2601
- Robin Round Cap Well**, tale, 1321
- Robinson Crusoe**, the real Crusoe, 354
the story of, with pictures, 1231
- Rob Roy**, story of novel, with picture, 1599
- Rochambeau, General Count**, 992
portrait, 981
first celebrated Washington's Birthday,
4464
- Rochdale**, goblin builders of, tale, 1321
- Roche, Walter**, Shakespeare's teacher, 3330
- Rochester Cathedral**, 1158
- Rocket**, a firework, 5249
used in building a bridge, 20
- Rocket**, engine, with picture, 616, 613
- Rock garden**, how to make, 1928, 2042
pictures, 1925, 2042
- Rock kangaroo**, lives among rocks, 862
- Rockling**, is a fish in our sea pools, 1411
- Rock pigeon**, 2214, 2215
- Rocks**, have records of many forms of life, 2883,
5844
how animals were shut up in, 47
how they are melted by rain, 2621
how they were formed, 404, 5844
how to know, with pictures, 5197
how to make a collection, 4246
make up the earth's surface, 2886
pillars of rock, picture, 405
take in oxygen, 4545
that look like men and animals, with pic-
tures, 1058, 1059
- Rock salt**, how it is formed, 1291, 3971
mine at Northwich, picture, 3971
- Rocky Mountains**, in Canada, 216, 5607
peaks of the Canadian, picture, 3686
- Rodents**, animals that gnaw, 668, 2099
- Rodin, Auguste**, figure from statue Le Penseur,
5025
his Citizens of Calais statue, 4169
work as sculptor, 4162
- Roe, Sir Thomas**, ambassador, 1702
- Roebuck**, numerous in Scotland, 382
- Rogers, John**, died for his faith, 5068
- Rogers, Mrs. Mary**, gave up her life, 320
- Rogers, Samuel**, poems: see Poetry Index
was a poet banker, 3126
- Roland**, fought against the Moors, 3354
hero of The Song of Roland, 2064
- Roland, Marie Jeanne**, guillotined, 4062
pictures, 4053, 4059
- Rolling litch**, with picture, 3283
- Rollo**, duke of Normandy, 2065, 3592
- Roman Catholics**, separate schools for, 5233
- Roman hyacinths**, 1610, 1816
- Roman law**, revised by Justinian, 3152
- Roman numerals**, 1543, 3425
- Romanoffs**, ruled in Russia, 3628
- Romans**, a brave Roman youth, story, 3884
and Christianity, 2524, 4707
at war with Carthage, 5262, 5511
building wall across England, picture, 199
built splendid bridges, 19
came to Britain, 194, 196
chariot race, picture, 5228
cities founded by the Romans, 198
civil war, 5265, 5266
coming into England, picture, 195
conquered the Celts in Switzerland, 2962
famous makers of Rome, 4945
grandeur that was Rome, 5259
history of Rome, 3012, 3018, 4945, 5259
how they wrote, 3400
learned basket-making in Britain, 395
legend of their origin, 5260
lost their power, 2522; with picture, 2523
made roads, 158, 270
navy established, 5262
ruined house of a governor, picture, 200
ruled the whole world of their time, 280

Romans, Roman remains discovered in Kent, 200
settled in the Iberian Peninsula, 3352
the devotion of a Roman, story, 2630
the emperors, 527
the first great men of Rome, 413
their power in Egypt, 4256, 4792, 5266
their wars with the Persians, 3876
took Macedonia and Greece, 5130
war with the Greeks, 3150, 5262
war with Parthians, 5065
wars with the Gauls, 5262
what they did in sculpture, 4160
Rome, became the capital of Italy, 3024
catacombs, 5806
climb up the Capitol hill, story, 3554
frugal hero of ancient Rome; story, 2002
geese who kept guard of the city, 554, 3855
its history, 4945, 5259
its monuments, 5005
marble columns, 5806
persecutions of Christians, 5806
stories of Rome, 2301
taken by the Goths, 5268
wolves kept in memory of Romulus, 5802
wonders of its ruins, 5801

Pictures of Rome

burning of Rome, 4951
chapel decorated with mosaic, 1991
entered by the Goths, 5263
miscellaneous pictures, 5801-5811
the bridge that led to Rome, 1402
view of the city, 3015
Rome, King of, Napoleon's son, 2276
Romeo and Juliet, play, and picture, 477, 5869
Romilly, Sir Samuel, his life, 3697
Romulus, founded Rome, 413, 5260
Romulus and Remus, possible truth of story, 5478
Ronalds, Sir Francis, made a telegraph system, 4314; pictures, 4312, 4313
Rontgen, Prof., discovered X-rays, 5175
Rood, Thomas, printing press, 3572
Roof camps, their use, 3198
Rooke, Admiral, captured Gibraltar, 1875
Roofs, pictures, 1745, 1847
Room, the room that is all wrong, with picture, 3175, 3285
Roosevelt, Theodore, administration, 3538
as president, 2418
picture, 3532
trip to Africa, 3538
Roosevelt, the, Peary's ship, 5211
picture, 5213
Root, George F., author of *The Battle Cry of Freedom*, 2957
Rope, how it is made, with pictures, 3991
why it does not lie straight when thrown, 3862
why it goes on swinging, 4440
Rope bridges, picture, 31
Roper, Margaret, love for her father, 1298
Roraima, Mount, 4576
Rosa, Monte, is a peak in the Alps, 2960
Rosa, Salvatore, his life, 4956; portrait, 4945
showing a painting, picture, 4947
Rosamund, killed by Queen Eleanor, 2532
Roscoe, William: see *Poetry Index*
Rose-chaffer, picture in colour, face 3140
Rosecrans, Gen'l, at Chickamauga, 2018
Rose maiden, story, with picture, 1114
Rose of Jericho, a story of, 1677
Rose-root, description of, 4834
picture, 4836
Roses, Christmas: see *Christmas rose*
fête in Pasadena, 4470
heraldic, or Tudor, 3428
how to make paper roses, 4140
how to plant rose-trees, 1817
how to rid the trees of insects, 3278
how to treat grafted roses, 1203
how to treat them, 927, 5269
making patterns, with picture, 3374
pictures, 5273
rose family, 4110
story about the rose, 190
the thorns are for climbing, 159
why they are red, 5847

Rosetta Stone, 4782, 4792, 5100; picture, 5099
Rosewood, what it is like, 4998
Roskilde, old capital of Denmark, 3598
Ross, General, 1399
Ross, Major Ronald, and mosquitoes, 3145
Ross, Sir James, explorer, 4724, 4730
portrait, 4725
Rosse, Lord, built a large telescope, 2862
Rossetti, Christina: see *Poetry Index*
Rossini, Gioacchino, composer, 3252
Rotation of crops, 903
Rothschild family, 6224
Rotomahana, a lake in New Zealand, 1462
Rotterdam, in the fourteenth century, 3458
its trade, 3462, 3464; picture, 3454
port of Holland, 3456
Rouen, town, 592, 2396, 2399
Roumania, flag, picture in colour, face 1640
its history, 3220
Roundheads, Cromwell's men, 189
Round Island, Scilly, picture, 4427
Round Table, story of, 869
Round tag, game, 574
Round the World in Eighty Days, picture, 4868
story of the book, 4865
Round turn and half hitch, how to make, with picture, 3283
Rousseau, Jean Jacques, his character and aims, 4097
his ideas about government, 4054
life, 5221; portraits, 4053, 4097
Rove beetle, 3263; picture, 3261
Rowley, Thomas, pseudonym of Chatterton, 5318
Royal Charles, relic at Amsterdam, 3464
Royal George, wreck, 4434
Royalists, followers of Charles I., 1894
Royal Standard, how we got it, 1639
Rubber, found in Congo forests, 3076
history of, with pictures, 5677, 5679
is collected in Africa, 4252, 4259, 4262
plantation near Beira, picture, 4259
trade in South America, 4567, 4574
utilisation, and manufactures of, 2669
Rubens, Peter Paul, a painter, 755, 4587
his picture, *A Mother and Child*, 763
portrait, 759
Rubicon, river of Italy, 5266
to cross the Rubicon, 420
Ruckstuhl, F. W., 4850
Rudolf, of Hapsburg, and the cup of cold water, 467
became Holy Roman emperor, 2852
founded the house of Hapsburg, 2527
pictures, 2525, 2851
waged war in Switzerland, 2964
Rue-anemone, 2838
Ruff, a bird, with picture, 1958, 1959
Ruffed grouse, picture, 1517
Rugby school, picture, 4063
Ruhr Valley, has a large coalfield, 2752
Rumelia, united with Bulgaria, 3222
Rum-pel-stilt-skin, story, and pictures, 553
Rumsey, James, steam experiments, 2468
Runners, Greek story, with picture, 62
Running, why we get out of breath, 1131
why we want to run down hills, 4750
Running stitch, how to do it, 456
Runnymede, Magna Carta signed, 597
Runt, a giant pigeon, 2213
Rupert, Prince, 219, 1888, 1895
picture, 1896
Rupert's Land, included in the Dominion, 1247
transferred to Canada, 1246, 5150
Eurik, the Viking, with picture, 3624
Rush, William, carver of figureheads, 4841
Rushlight holder, picture, 1539
Ruskin, John, a good and happy girl, an extract, 5501
his life and work, 4106
his opinion of the Colleoni statue, 1256
his story, *The King of the Golden River*, 1433, 1472
how he describes an idiot, 5281
on wealth, 3617
on word valuable, 1570
pictures, 4097, 4103
what he said about the senses, 3867
what he said of iron, 1776

INDEX

Russell, Clark, writes sea-stories, 3740
Russell, Henry, portrait, 3737
 wrote songs, 3740
Russell, Lord John, introduced bill for union of the Canadas, 1240
Russia, adopted the eagle as its arms, 3626
 as it is to-day, 3745
 churches, 3748
 colonies in North America, 2178
 conquests in Asia, 3380
 defeated Charles XII., 3596
 enslavement of peasants, 3628, 3632
 helped Greece against the Turks, 3220
 how its power grew, 3158
 imperial standard, 1640
 invaded Bulgaria, 3154, 3220
 invaded by Napoleon, 2276
 its history, 3624
 its industries and towns, 3746
 its people, 3623, 3745
 its physical features, 3623, 3745
 population increase, 1644
 possessions in Central Asia, 3932
 railways, 3750
 signed the Treaty of Berlin, 3222
 struggle for freedom, 3753
 the making of Russia, 3623
 took part of Poland, 2578
 war with England: see Crimean War
 war with Japan: see Russo-Japanese War
 went to war with Turkey, 3222

Pictures of Russia

flag of Russia, in colour, face 1640
 maps, 3625, 3754
 peasant types, 3747
 peasants bringing tribute, 3629
 Pugatchev as Peter III., 3629
 Russian eagle, 3623
 Russians fighting the Scythians, 3623
Russian gossip, game, 237
Russo-Japanese War, 368, 3753
Russula, edible mushroom, 4754
Rust, increases weight, 3235
 what causes it, 1776
Rustic carpentry, with picture, 4349
Eutuli, fought with the Trojans, 72
Ruyter, Michael de: see De Ruyter
Rydal, where the Stag Waterfall is, 4341
Ryder, Albert P., art of, 4152
Eye bread, is eaten in Russia, 1144
Eyerson, Dr., a political leader, 746, 1242
Eyks Museum, at Amsterdam, 3464, 4722

S

Sabbath, in the colonies, 946
Sabine tribe, 5260
Sable, animal, 140, 3408
Sabots, worn by French children, 2399
Sabra, Princess, saved by St. George, 960
Saccharine, is sweeter than sugar, 4230
Saccharine syrup, what it is, 695
Sack race, game, 724
Sacred beetle, with picture, 3264
Sacrifice, of a king's sister, story, 468
Sacrum, a bone of the human body, 2442
Sadowa, battle of, 2579
Safe-deposit vault, description of a, with pictures, 5371
Safety lamp, how it works, and picture, 4319
 invented by Sir Humphry Davy, 1871, 5787
 made by Stevenson, 614
Safety match, 773, 776
Sagas, Scandinavian writings, 3592
Sage, a herb, 3176
Saguenay, district of Canada, 536
 scene on, picture, 6189
Sahara Desert, 280, 3072, 4253, 6029
 its caravans, 6037
 scene in, picture, 4251
Sailing ships, first used, 73
Sailor, how he knows his way at sea, 4438
 how he ties his knots, 235
 puzzle of the laughing sailor, with picture, 2568, 2694
Saint, Thomas, made sewing machine, 1621

Saint, stories of the saints, 1007
 why saints are drawn with halos, 5650
St. Albans Cathedral, picture, 482
St. Angelo, fortress of, 3020
St. Augustine, and Christianity, 5524
St. Augustine, Fla., attacked, 524
 founded, 262
 picture, 5612
St. Bartholomew's Day, massacre, 2070
 pictures, 2063, 2071
St. Basil Cathedral, and picture, 3749
St. Bernard dog, 500; picture, 498
 story of Barry, 6270
St. Bernard Pass, Roman road over, 2962
St. Croix River, discovered, 537
St. Etienne, coalfield, 2396
St. Gall, monastery, 2964, 2968
St. Gallen, has old manuscripts, 2964
Saint Gaudens, Augustus, sculpture of, with pictures, 4841, 4846, 4847
St. George, fight with the dragon, pictures, 961, 5929
St. Gothard, Mount, railway tunnel through, 2968, 6203
 where it is, 2960
St. Helena, Napoleon's prison, 1876, 2277
St. Helier, the man who saved St. Helier, story, with picture, 1053
St. Isaac's Cathedral, St. Petersburg, 3746
St. John, N. B., description, 5604
 picture, 5605
St. John Lateran, in Rome, 4950
St. John River, discovered, 537
St. John's-wort, family of plants, what it is like, 4111
St. Just, Louis de, portrait, 4053
St. Keyne's Well, legend, 4277
St. Kitts, exports sugar, 1877
St. Lawrence River, description, 212
 discovered, 536
 picture, 28
 rapids of, 5426
St. Leonards, the dragon of, 3648
St. Louis, Mo., World's Fair in, 3538
St. Lucia, has a fine harbour, 1878
St. Mark's Cathedral, Venice, 618, 1990
 how it was built, 1250, 1252
 pictures, 619, 1251
 story of the bronze horses, 3016, 5005
St. Patrick, and shamrock, 3052
St. Paul's Cathedral, London, picture of the building, 1161
 story of how it was built, 1160
 the echo, 3976
St. Paul's Church, in New York, 4303
St. Peter and St. Paul Cathedral, 3748
St. Peter and St. Paul Fortress, St. Petersburg, picture, 3745
St. Petersburg, city, 3630, 3746
 Nevski Prospect, picture, 3749
St. Peter's Cathedral, Rome, 3019, 5309
 its architectural beauty, 5309
 its sculptures, 5312
 Raphael drew plans, 758
 the building of, 4948, 4950, 4952
 the largest in the world, 3018
 treasure-house of the world, 5809
St. Pierre, destroyed by volcano, 1878
St. Ronan's Well, story, 1495
St. Sophia Cathedral, Constantinople, 3152, 3156; picture, 3151
St. Vincent, Cape, battle of, 3358, 4358
St. Vincent, John Jervis, Earl of, 4358
St. Vincent's rocks, legend, 3208
Ste. Anne de Beaupré, pictures, 5871
Sainte-Chapelle, description, with pictures, 5332
Saker, a falcon, 1846
Sakhalin, island, 363
Saladin, Sultan, and Egypt, 4256
 in the Crusades, 1539, 2704, 3878
 picture, 1592
Salamanca, battle of, 4364
Salamander, and picture, 1223, 1228
Salamis, battle of, 1302, 5064, 5127, 5129
Salem, town in Massachusetts, 1470
Salisbury, Robert Cecil, Earl of, statesman of James I., 1792, 2380
Salisbury, Robert Cecil, Marquis of, 2380
Salisbury Cathedral, picture, 4593
Saliva, how it helps digestion, 2205, 2345

INDEX

- Sallow**, willow, picture, 3191
Sallow-thorn: see Blackthorn
Salmon, fish, its life-story, 2676
in British Columbia, 3897
loading salmon, pictures, 2679, 3899
salmon-leap, pictures, 2675, 2677
Salmon trout, and picture, 2679, 2680
Salomon, picture of Gustavus Vasa, 3593
Salt, city of salt in Poland, 2858
how animals require salt, 3215
how prepared for use, with pictures, 224
how the stomach uses it, 2344
in Canada, 5600
necessity in food, 2698
pictures, 222, 223, 224, 2324
production of in U. S., 2661
sugar and salt, story, 5082
the salt of the earth, 223
various kinds in the sea, 1270
what it is, 1291, 1797, 1800
where it is found, 3971
where salt of sea comes from, 407
why it is damp before rain, 3760
why it makes us thirsty, 1271
why it melts snow, 3864
why sun does not draw salt from sea, 3093
Salt Lake City, founded, 1834
Saltwort, black: see Milkwort, sea
description, 5185
picture, 5192
Salvador, flag, picture in colour, 1640
republic, 4392
Salzburg, town, 2854; with picture, 2857
Samaria, taken by Assyrians, 4978
Samarkand, dervish, picture, 3939
where it is, and picture, 3935
Samnites, war with Romans, 2002, 5262
Samoa, discovery of, 5774
Germany in, 2756
history and description, 2190
life in, 5774-5776
Samphire, marsh: see Glasswort
plant, 4112
rock, picture, 5184
Sampler, how to make, with pictures, 5529
Sampson, **Commodore W. T.**, fleet at Santiago,
2183
Samurai, Japanese retainer, 365
San Antonio, Texas, 5986
Sand, desert in Central Asia, 108
grains, through microscope, picture, 2325
how it is made, 407, 1410, 5843
how to build castles, with pictures, 4025
on the seashore, 5381; picture, 5843
sand-builders of the beach, picture, 1415
where does it come from, 5843
why the sun makes sands steam, 3094
wonder of a world of sand, pictures, 4122
Sandals, first foot-covering, 3102
Sand-box, plant, seeds, picture, 3732
San Francisco, bay discovered, 267
Sandhopper, and picture, 2587, 2589
San Domingo: see Hayti
Sand-lizard, and picture, 1226
Sand-martin, and picture, 2211, 2212
nest of, picture, 5786
Sandor, Count, an eccentric horseman, 5694
Sandor Album, sketches of Count Sandor's
feats, 5694
Sand-piper, bird, 1958
Sand-screw, sea animal, 2587
Sand-star, sea animal, 2342
Sandstone, 915, 2886, 3036, 5197
Sandstorm, picture, 6033
Sand-viper, a relative of the viper, 1380
Sandwiches, how to make, 3284, 3285
San Giovanni, church in Florence, its gates,
2782; picture, 2783
Sangster, Charles: see Poetry Index
Sangster, Margaret E.: see Poetry Index
Sanicle, plant, 3951
Sankey, Ira, work, 1998; picture, 1999
San Martin, José de, patriot, 4506
Sanmichele, Michele, architect, 1252
San Salvador, reached, 4463
Sansovino, Jacopo, his life, 1252
Sant, J., picture of Whittington, 327
Santa Anna, Gen., at Buena Vista, 1832
defeated, 1832
his death, 4392
president of Mexico, 4388
Santa Claus, the real Santa Claus, 1013
true story of Father Christmas, with pictures
in colour, 2146, 2155
Santa Cruz, founded, 4505; pictures, 1465
Santa Fé, founded, 262
Santa Maria, ship, picture, 56
Santa Maria Novella, Florence, its beautiful
walls, picture, 2785
Santangel, statesman of Spain, 2367
Santiago, in Chile, 4569; picture, 4573
Santiago, Cuba, battle of fleets at, 2188
Santos, a port of Brazil, 4568
Saône, river, in France, 2394
Sapor I., king of Persia, 5066
Sapor II., king of Persia, 5066
Sapsucker, yellow-bellied, 3041
Saracens: see Arabs and Moors
Saragossa, maid of, story, and picture, 4645
town in Spain, 3352, 3353
Saratoga, battles of, 983
Sarawak, flag, picture in colour, face 1640
Sardine, and picture, 205, 206
Sardinia, 3012, 3020
Sargent, John Singer, art of, 4151
Sargon, king of Assyria, 4978, 6218
Sarracenia, plant, and picture, 3641
Sarsaparilla, wild, 3051
Sarts, people of Asia, picture, 3939
Sarus crane, 1958
Saskatchewan, description, 214, 216, 220, 5368
education in, 5233
organised, 1247
province formed, 1248
Saskatoon, growing rapidly, 5368
Sassafras, picture, 5443
Sassanian Empire, 5066
Satellite, its meaning, 2219, 3032
Satin bower bird, with picture, 665, 1742
Satin stitch, with picture, 1507
Satisfaction, the benefit of not being satisfied,
5170
Saturday, meaning of name, 87
Saturn, god, 87; picture, 87
Saturn, planet, has tides, 2280
its moons, 150, 2080, 3032, 4345
probably has no life, 2080
what is known about it, 2428
Saüba ant, how it lives and works, 2944
Saunier, Madeleine, story of her life, 1054
Saurez, Don Mendo Quroga y, in Mexican
legend, 5231
Savannah, steamboat, 2472; picture, 2473
Savannah, Georgia, captured, 2020
founded, 524
Save River, of Hungary, 2860, 3222
Savonarola, bonfire of vanities, picture, 3980
his life, 3988; portrait, 3981
Saw, how to use a saw, with picture, 337, 338
the kind of a saw to buy, 337
why saws have little notch on top, 5794
Saw-fish, 1086, 2675; picture, 1085
Saxifrage, different kinds, 2042
early, 2837
mossy, picture, 4835
pictures, 2042
the saxifrage family, 4112
yellow mountain, 4834; picture, 4835
Saxons, came to England, 427
Saxony, state in Germany, 2578, 2752
Scabious, field, 4417; with picture, 4416
flower, its family, 4112
Scald, how to treat, 5110
Scale, why, has a weight at top, 5962
Scale insect, eaten by the ladybird, 3266
Scales and the globe, picture, 3551
Scales, in music: see Music
Scanderbeg, won freedom for Albania, 122
Scandinavia: see Norway and Sweden
Scandinavian Alps, where they are, 3591
Scandinavians, their history, 430, 3592
Scar, on body, not true skin, 1962
Scarabæus, beetle, with picture, 3264
Scarborough, story of, 1320
Scarf, how to make, with picture, 1348
Scarlet runner bean, how to preserve, 4353
Scarlet tiger moth, pictures in colour, face
2982, face 3140
Scawfell, mountain, picture, 5017
Scetre, origin of, 5650
Schadoufs, water-carrying instruments in use
on the Nile, 5828; picture, 5817

INDEX

Schaffhausen, has wonderful falls, 2960
Schamyl, his life, and picture, 2952
Schelde River, in Belgium, 3455
Schenectady, burning of, 880
Schiller, Johann C. F., life, 5222; portrait, 5217
 statue in Berlin, 2748
Schleswig, province, 3596
Schley, Commodore, at Santiago, 2188
Schliemann, Dr., his discovery, 5004
Schlüsselburg, town in Russia, 3630
Schoeffer, Peter, metal-worker, 3569
Schofield, Gen'l, and Hood's army, 2020
Schoolgirl, of Dorset, story, 4831
Schoolmistress, a game, 2573
Schools, and schoolmen in Canada, 5233
 Confucius in Chinese, 5580
 in New York, 3193
 in the colonies, 942
 the Academy of Plato, 5510
Schooner, with picture, 3914
Schubert, Franz, life, 3249; portrait, 3243
Schuckburg, Dr., and "Yankee Doodle," 2955
Schumann, Robert, his life, 3250
 portrait, 3243
Schuyler, Philip, at Cambridge, 984
 at Saratoga, 988
 picture, 985
Schwartzburg, Catherine, Countess of, her
 heroism, and picture, 3883
Schwyz, Swiss canton, 2964
Science, famous men of, 851
 heroes of, 3200
Scipio, Æmilianus, Roman general, 5264
Scipio, Cornelius, called Africanus, 416
Scissors, how they are made, pictures, 4741
Scopas, a great sculptor, 4160
Scorpion, and pictures, 3301, 3304
Scotch argus, butterfly, 2992
Scotch rose, 1817
Scotland, Charles and the Covenant, 1888
 Edward I. claimed the crown, 748
 how the people's food is changing, 2926
 invaded by Northmen, 434
 kings and queens of Scotland, 3079
 religious persecution, 5067
 saved by thistle, 4424
 story of the Scottish flag, 2333
 united with England, 1029
 why it is so rainy, 3094
Scots pine, pictures, 3441
Scott, Capt. Robert Falcon, death of, 5054
 expedition to South Pole, 4730, 5051
 portrait, 4725, 5053
Scott, Duncan Campbell: see Poetry Index
Scott, Frederick George: see Poetry Index
Scott, Sir Gilbert, Albert memorial, 5004
Scott, Sir Walter, disbelief in gas, 657
 monument in Edinburgh, picture, 5013
 pictures, 2307, 2308, 2309, 3902
 poems: see Poetry Index
 the hand of, 5904
 the story of his life, 2307
 Waverley Novels, 1493, 1599, 1645, 1757
 what he said about planting trees, 3077
 where he got the story of The Heart of
 Midlothian, 2204
Scott, Winfield, in Canada, 746, 1399
 in Mexico, with picture, 1832
Scouts: see Boy Scouts
Scramblepipe, adventures, with pictures in
 colour, 2143, 3644, 3849
Screen, how to make, with picture, 2871
Screwdriver, its use, with picture, 338
Scully, heroism in Indian Mutiny, 1913
Sculpture, a little talk on sculpture, 4159
 American sculptors, with pictures, 4841
 good and bad work, 5005
 Indian, a picture, 16
 talk about monuments, 5003
Scurvy-grass, picture, 4838
Scutari, in Constantinople, 3226, 3874
Scutari, Lake, 3224, 3882
Scylla, a famous rock, 70, 4743
Scythians, 3623, 4982
Sea, blue light seen at night, 3694
 conquerors of the sea, 2467
 gets larger in some places, 1270
 gold and radium found in, 2619
 held in place by the earth's gravitation, 5687
 how a current is made, 1056
 how it affects climate, 4323

Sea, how it became dry land, 47
 how life came out of the sea, 359
 how much water there is, 2620
 how we tell what is at bottom, 3755
 its depth, 5167
 smaller fishes of the sea, 201
 tides: see Tides
 was at one time very hot, 167
 when it is warmest, 4324
 why it does not freeze, 4546
 why it is never still, 1055
 why it is not too full, 406
 why it is salt, 1270
 why it roars, 4545
 why its colour changes, 1864
 why moon's reflection follows us, 2672
 why the water does not sink into the ground,
 3430

Pictures of the Sea

how it moves, 35
 sea scenes, 1412
 some wonderful growths in the sea, through
 the microscope, 2339
 strange forms of life below the sea, 2334
 view of sea and rocks, 36
 washing away the shore, 404, 4431
Sea-anemone, its life-story, 1411, 2338
 pictures, 1417, face 2335 in colour, 2337
 where to find it, 4454
Sea-animals, colony of, picture, 2334
Sea-bear, seal that has fur, 1090
Sea Breeze Home, its work, 3196
Sea-cucumber, an animal, 2342
 pictures, 1417, face 2335 in colour
Sea-devil, the angler-fish, 207
Sea-eagle, American bald, 1839; picture, 1838
Sea-eel, 2451; picture, 2449
Sea-egg, the sea-urchin, 2342
Sea-elephant, and picture, 1089, 1090
Sea-flowers, picture in colour, face 2334
Sea-hedgehog, pictures, 1416, 1417
Sea-horse, and picture, 209, 210
Seal, education of, 5480
 intelligent behaviour of, 5328
 its life-story, 1090
 pictures, 1089, 2731
Sea-lavender, 1509, 5190; picture, 5184
Sealing-wax, 617, 2135
Sea-lion, 1091; pictures, 51, 1089
Sealskin, how it is obtained, 1090
Sea-lyme grass, picture, 1336
Sea-milkwort, picture, 5191
Sea-nettle, jelly-fish, 2341; picture, 2334
Sea-otter, picture, 2729
Sea-pen, formed of animals, picture, 2334
Sea-pink, 2042, 4838
Sea-pudding, the sea-cucumber, 2342
Search for the princess, story, 324
Sea-reed, 1334; picture, 1334
Sea-scorpions, used to live, 46
Sea-serpent, 49, 2452
Seashore walk, with pictures, 1409, 1418
Sea-sickness, how it may be caused, 2454
Sea-slug, pictures, 2334, 2337
Sea-snake, banded, picture, 1379
Seasons, the cause of, 411, 3032
 the wonder of, with picture, 1120
Sea-swallow, the tern, 1630
Sea-trout, the salmon trout, 2680
Sea-unicorn, the narwhal, 1088
Sea-urchin, has a tough, limy skin, 2342
 pictures, 1416, 1417, face 2334 in colour
Sea-urchin cactus, picture, 3975
Sea-wall, made of concrete, picture, 4432
Sea-water, how to get it, 4454
 its specific gravity, 3816, 3817
Seaweed, first plants like seaweed, 169
 how it tells the weather, 3922, 5166
 how to make a collection, 4877
 its use, 4877
 pictures, 169, 1411, 4876, 4877
 the air in seaweed, 5016
Sebastopol, 1098, 3631, 3632
Sebert, King, built a church, 4635
Second, unit of time, 3670
Secondary colours, what they are, 2654
Second Estate, in France, 2268
Secretary bird, its life-story, 1844; with picture,
 1841

INDEX

Secret lock, puzzle, with picture, 2766, 2872
Secret writing, 4137
Sedan, battle of, 2277, 2580
Sedan chairs, first used in London, 6106
Sedge-warbler, 2057; picture, 2053
Sedimentary rocks, what they are, 3036
Sedum, 2042, 5271; pictures, 2042, 5277
See, district ruled by a bishop, 4707
Seedlings, how to treat, 719, 1816, 3616
Seeds, come up at different times, 1134
 growth after hundreds of years, 1778
 how did the first ones grow, 5849
 how plants are formed, 1134
 how the colours of a plant are made, 4442
 how they are carried by birds, 2210
 how they are sown, with picture, 4083
 how they are spread, with picture, 3733
 how they breathe, 912
 how they grow, with picture, 3732
 how to preserve for sowing, 1203
 how to sow them, 233, 2971
 life-story of a seed, 3734
 plant in seed, 2077
 sprout when watered, 1776
 that may be sown in August, 1350
 travel long distances, picture, 3833
See-saw, how it balances, 3673
 how to make a, 5657
Sefton, Mount, with picture, 1461
Seine, river in France, 2394
Sejanus, plotted to murder Tiberius, 528
Seleucia, capital of the Seleucidæ, 5065
Seleucus, king of Persia, 5065
Self-binders, at work, picture, 4085
Self-consciousness, what it is, 5131
Selkirk, Alexander, real Crusoe, 354, 1231
Selkirks, mountains of Canada, 5607
 picture, 6189
Selvas, forests of South America, 4567
Semaphore signalling, with pictures, 3722, 3724
 used in coastguard work, picture, 4430
Semitic tribes, conquered Sumerians, 4974
Semolina, a preparation of wheat, 2925
Sempach, battle of, 122, 2966
Seneca, the tutor of Nero, 530
Sennacherib, history on cylinders, 4978
 how his army was destroyed, 4980
Sensation, associated sensations, 4823
Senses, how our senses are linked, 3719
 how our senses make our minds, 4731
 skin as an organ of sense, 1964
 the different senses, 3868
 what contact senses are, 3361
 what use they are, 1
Sensitiveness, its value, 3867
Sensitive plant, 3539, 4118; picture, 2796
Sentinel, how his life was saved, 1536
Sepals, of a flower, 4110; picture, 3736
Sepia, colour used in painting, 2452
Sepoys, mutinied against the British, 1706, 1913
 native Indian soldiers, 1093
September, how it got its name, 4521
 symbolic scene, picture, 4519
Serapis, temple of, with picture, 3003
Serapis, the, and the Bon Homme Richard, 2398
Serbs, settled in Servia, 3150
Serfs, in France, 2066
 in Russia, 3628, 3632
Seriema, bird, with picture, 1956, 1957
Seringapatam, the wreck of, 4178
Serpent, The, game, and picture, 5106
Serpentine, rock, 4246, 5198
Servant, who saved his own mistress, 1734
Servetus, his discovery, 1579
Servia, compact against Basil II., 3154
 conquered by Mohammed II., 3156
 flag, picture in colour, face 1640
 its history, 3222
 women in national dress, picture, 3225
Service, **Robt. & W.**: see Poetry Index
Service-berry: see Shadbush
Service-tree, with picture, 3447
Serviette-holder, made from curtain-rings, with picture, 3172
Sesame, power of, 5501
Sesame and Lilies, extract from book, 5501
Seti I., built a pylon, 5007
Seton Indians: see Boy Scouts
Setterwort, 4289
Seoul, capital of Korea, 368

Seven Days' War, 2856
Seven Fines, battle of, 2016
Seven Sisters, waterfall in Norway, 3599
Seven Years' War, 2530
Severus, Arch of, imitated, 5005
Seville, a beautiful city, 3356, 3361
 dates from Roman times, 3352
 grows bitter oranges, 643
Sèvres, noted for china, 2396
Seward, William H., plot to kill, 2022
Sewing, afternoon tea-cloth, 5449
 braid lace collar, 5352
 little picture on canvas, 5529
 pretty needlework bag, 5665

See also Embroidery

Sewing-machine, manufacture of, 1621
Sewing stitch, how to do, with picture, 836
Sextus, son of Tarquin, 413
 warred against Rome, 1403
Shackleton, Lieutenant, South Pole expedition, 4438, 4730, 5051; with portraits, 4725, 5052
Shadbush, description, 5626; picture, 5623
Shade, for a candle, with picture, 100
Shadow theatre, a little, 5893
Shadows, and reflections, 5524
 earth's shadow on the moon, 1862
 how they are made, 1724, 3434
 shadows on wall, with picture, 5201
 show the height of objects, 2223
 vary according to sun, 3092, 4597
Shaft, of a coal-mine, 800
Shaftesbury, Seventh Earl of, his work as a reformer, 3704
 pictures, 3697, 3705
 statue, 1100
Shaggy manes, mushrooms, 4754
Shagreen, skin of the shark, 2446
Shahab-ud-Din, Indian emperor, 2912
Shaheen, an Indian falcon, 1846
Shah Jehan, built the Taj Mahal, 1550, 1702; portrait, 1699
Shakespeare, William, Anne Hathaway's cottage, picture, 5743
 characteristics, 5964
 conditions before his birth, 5745, 5746, 5750
 his life-story, 3330, 5963
 his plays, 313, 473
 his power of unveiling the past, 5963
 how many words he used, 2330
 how the Bible was read in his time, picture, 5744
 how to make a model of his birthplace, with pictures, 335, 336
 inscription on his tomb, 5964
 lived in Elizabeth's reign, 846, 2535
 love of England, 5966
 pictures, 5965, 5967
 plays, 5965
 poems: see Poetry Index
 portrait bust of, 4848
 scenes from plays, pictures, 312, 5969, 5970, 5971
 scenes in his life, pictures, 3327, 3333
 song to Sylvia, 5966
 the boy Shakespeare in the Forest of Arden, with picture, 5652
 the soliloquy of Henry V., 5360
 what he called the Bermudas, 1878
 what he said of gold, 1571
 where his plays were acted, picture, 5749
 wise sayings from his plays, 2921

See also Names of Plays

Shalmaneser II., king of Assyria, 4977
Shamrock, sorrel served as original, 3052
 the four-leaved, story, 1110
Shanghai, town, and picture, 113, 115
Shanley, Charles Dawson: see Poetry Index
Shannon, the, and Chesapeake, 1399, 2902
Shantung Mountains, in east China, 106
Shark, can live in fresh water, 2675
 different kinds, with pictures, 51, 2443, 2444, 2445
 how it is accompanied by other fish, 207
 one of the early animals, 48
 why a shark's tail is fastened to a mast, 5962
Shark moth, picture, 3413
Sharp, Granville, work against slavery, and portrait, 4646
Sharp, James, archbishop, murder of, 1760

INDEX

- Sharpsburg** (also called Antietam), battle of, 2016
- Shawl**, how to crochet, and pictures, 5107
why the fine shawls come from Shetland, with pictures, 5419
- Shaw Memorial**, sculptured relief of, 4848
- Shays' Rebellion**, in Massachusetts, 1389
- Shear-water**, bird, 1626
- Sheath-bill**, 1626; picture, 1627
- Sheep**, different kinds, 378
how long they live, 2328
pictures, 51, 377, 379
play of young, 5481
reared in Australia, 1358
why they have wool, 3236
- Sheep-bot**, with picture, 3257, 3262
- Sheep-dog**, intelligence of, 6270; picture, 503
story of Hogg's sheep-dog, 6270
- Sheep's fescue grass**, picture, 2973
- Sheepshank knot**, with picture, 236
- Sheet bend knot**, picture, 235
- Sheldrake**, duck, picture, 1519
- Shell**, what makes it fly from a gun, 5857
- Shellac varnish**, 2256
- Shelley, Percy Bysshe**, poet, his life, 3910
poems: see Poetry Index
portrait, 3907
portrait bust of, 4848
- Shell-fish**, not true fish, 661, 4826
roof of mouth magnified, picture, 2326
- Shells**, how to make a collection, 4770
pictures, 3755, 3759
sounds which they pick up, 909
where they come from, 3755, 5844
- Shelter**, easily made, 5922
- Shenstone, William**: see Poetry Index
- Shepherd**, greedy shepherd, story, and pictures, 1046
shepherd maid and the sweep, story, with picture, 4633
takes care of sheep, 1929
- Shepherdess**, of the moors, story, 2095
- Sheraton, Thomas**, his life and work, 6126
- Sheridan, Philip H.**, in the Shenandoah Valley, 2020
picture, 2017
- Sherman, Roger**, portrait, 987
- Sherman, William Tecumseh**, and army in the West, 2018
March to the Sea, with picture, 2020
picture, 2017
statue of, 4848; with picture, 5182
- Sherwood Forest**, 2601
- Shetland Islands**, story of the shawls of, 5419
the silkie wife, story, 556
- Shetland pony**, 272; picture, 270
- Shillibeer, George**, introduces omnibuses in London, 6107
- Shiloh**, battle of, 2013
- Shin-bone**, jointed to thigh-bone, 2546
- Shingle**, made by water, 407, 5844
on the south coast of England, 3035
- Shintoism**, religion of Japan, 364
Shinto temple in Japan, picture, 371
- Ship constellation**, nebula, picture, 2863
- Shipka**, battle of, 3222
- Ships**, American liners, their great size, 73
coffin ships, 1574
effect of ballast, 3833
guarded from the teredo, 2588
how a ship comes into sight, 5
how to understand different parts, 4564
many dangers for, 737
picture of the largest ship, 5476
submarine, 5585
why an iron vessel floats, 685
why they have figures on bows, 5794
- Pictures of ships**
- full-rigged ship, 3915
how a ship would look in a street, 74
inside of Cunard ship, 75
principal parts of a ship, 4564
ship at sea in moonlight, 73
ship on the water, 2951
what it is like on board, 75
wonder of ship sailing at night, 73
- See also Battles (naval)**
- Shipton, Mother**, story, with picture, 2096
- Shipwrecked sailor**, the oldest story, 67
- Shiré River**, tributary of Zambesi, 4254
- Shireen**, wife of Chosroes II., 3876
- Shires**, their formation, 428
- Shirlaw, Walter**, an artist, 4152
- Shirpurla**, city of Mesopotamia, 4974
- Shivering**, why we shiver when cold, 2232
- Shock**, why it makes people jump, 2878
- Shoe factories** in New England, 3101
- Shoemakers**, wonderful procession of, a picture, 5343
- Shoes**, how made, with pictures, 3097
machines for sewing, 2670, 3097, 3099
- Shogun**, Japanese ruler, 365
- Shommar**, a Bedouin tribe, 6029
- Shooting at a target**, picture, 4545
- Shooting stars**, 145, 152, 1123, 1863
picture, 145
- Shop-window**, tale of a, 5691
- Shore**, the little man by the secret shore, story, and picture, 4928
- Shore crab**, 2584
- Short-billed turbit pigeon**, picture, 2213
- Short History of the English People**, extract from, 5502
- Short sight**, what it is, 4295
- Shoulder-blade**, how it is made, 2544
- Shovel, Sir Cloudesley**, story of, 4070
- Shovel**, steam, pictures, 5633, 5634
- Showy lily**, 5272
- Shrew**, animal, 674; with picture, 673
dwelling, 5413
- Shrike**, a bird of prey, 1848
Canadian, 3494
- Shrimp**, food for the sea-anemone, 1411
hides during the day, 2587; picture, 2585
- Shrimp Girl**, by Hogarth, picture, 763
- Shrubs**, American, with pictures, 4487
- Shumer, Land of**, a name for Chaldaea, 4974
- Shuttlecock and battledore**, game, 3516
- Siam**, flag, picture in colour, 1640
- Siberia**, conquered by a Cossack, 3628
exiles recalled by Peter III., 3630
farming in, 3598
flag, picture in colour, 1640
was perhaps once a sea, 3940
where prisoners are sent, 3746
- Siberian railway**, 3752
- Siberian squill**, flower, 5272
- Sicily**, added to German Empire, 2527
belongs to Italy, 3012
how its progress was hindered, 3020
made a Roman province, 5264
may become joined to Italy, 2838
very liable to earthquakes, 3229
- Side Saddle Flower**, the, pitcher plant, 2842
- Sidney, Colonel**, story of his son, and picture, 4806
- Sidney, Sir Philip**, fought in the Low Countries, 3462
how he gave the cup of cold water, 467; with picture, 466
lived in Elizabeth's reign, 2535
poems: see Poetry Index
was a friend of Spenser, 3329
- Sierra Morena Mountains**, 3352
- Sierra Nevada Mountains**, 3352
- Sight**, always an error in our sight, 104
can a blind man's touch take the place of his sight? 5486
can we think about people without seeing them in our minds? 5486
controlled by the brain, 3543
do we always see everything the moment it happens? 5640
how far we can see, 3539
how it is governed by brain, 3778
how it varies, 4602
how man's sight has developed, 3719
how we see spots, 3035
how we see things, 3861
influenced by memory, 1642
pictures printed on the eyes, 4548
seeing colours, 3035, 3758, 4507
seeing small things, 2874, 4828
sight from a height, 2332, 3438
the different kinds of sight, 4295
trick of, 5666
we cannot see everything, 510
we do not see a thing at once, 3380
we see only one thing with both eyes, 3543
why a star is seen star-shaped, 2879

INDEX

Sight, why we cannot see in the dark, 153
 why we do not see things upside down, 39
 why we see a black spot after looking at the sun, 42
 why we see so much at once, 1642

Sigismund, Emperor, 2854, 3154

Signboards and the wind, a story, 5342

Signs, how to speak by, and picture, 3722

Sigourney, Mrs.: see Poetry Index

Sikhs, are fine soldiers, 1099
 rose against the British, 1706
 the noble Sikh, story, 2548

Si-kiang, river in China, 106

Silchester, buried city found, 5100

Silenas, companion of Bacchus, 556

Silesia, province, 2530, 2752, 2858

Silhouettes, making of, with pictures, 5521

Silicon, what it is, 4821

Silk, French weavers settled in England, 1028
 how it is prepared, 1810
 how to make a roll-up case for silks, picture, 6064
 production of, 2664
 the wonder of a piece of silk, 1805
 threads through microscope, picture, 2325
 where it is made, 2396

Silkie wife in Shetland Isles, story, 556

Silkworm, disease among silkworms, 1812
 its life-story, 1805
 pictures, 1805, 1809, 1811

Silkworm moth, 1812, 2988; picture, 1805

Sill, Edward Rowland: see Poetry Index

Silliman, Dr.: tested kerosene, 4131

Silver, cannot be changed, 838
 German silver: see German silver
 in Canada, 5599
 production of, in U. S., 2660
 what makes it tarnish, 1776
 why gold is more valuable, 1570
 why it is called a noble metal, 1293
 why silver forks have marks, 5794

Silver fox, with picture, 2729

Silver pheasant, 1515; picture, 1516

Silverweed, 4110

Simcoe, John Graves, as governor, 1248

Simla, a city in India, 1548

Simmerdale Water, legend, 465

Simon says, a game, 2137

Simon's Bay, sinking of Birkenhead in, 1802

Simoon, in the desert, 6038

Simplicius, died for his religion, 964

Simplon Pass, description of, 2367
 picture, 6203

Simplon Tunnel, a thrilling meeting inside the Alps, picture, 6213
 cost of construction, 6203
 description of, 6203
 hidden rivers of hot and cold water, picture, 6209
 how it was built, 6204; pictures, 6208, 6210
 how the workmen were cared for, 6204
 longest in the world, 6203

Simpson, Sir George, head of the Hudson's Bay Co., 5150

Simpson, Sir James Young, his life, 4201, 5752
 pictures, 4195, 4199

Sinbad the Sailor, how the story may have arisen, 67
 story, with picture, 810

Sinew, a tendon, 2625

Singapore, obtained from Dutch, 1879

Singer, Isaac, improved sewing-machine, 1624

Singer Building, in New York City, a picture, 2663

Singers, five singers, picture, 2149

Singh, in story of the hundred thousand monkeys, 5655

Singhalese, in Further India, 1880

Singing, a kind of expiration, 1638
 how a good singer uses his voice, 4916
 how we sing, 3958
 talking and singing, 4073

Siren, how it works, picture, 4859
 its sound, 4760
 the many-voiced siren, 4860

Sirenia, the manatee and dugong, 1088

Sirens, beautiful singing maidens, 70

Sirius, legend of Sirius, 3313
 star, 1860, 2088, 2614

Sirius, steamer, 2472

Sisal hemp, picture, 3991

Siskin, pine, 3491

Sister, the undying love of a, story, 964

Sisters of Charity, 3010

Sistine Chapel, 4948, 4950, 4952
 pictures, 4949

Sisyphus, of Corinth, his punishment, 4518
 married Merope, 3314

Sivatherium, horned animal, picture, 44

Six Nations, in French and Indian War, 885
 why so-called, 523

Sixpence, the disappearing sixpence, trick, with picture, 1347

Six-plumed bird of paradise, 1738

Sixtus IV., pope, 4948

Size, the size and weight of things, 3813
 why dark things look small, 3382

Skate, fish, 2448; pictures, 1410, 2449

Skating, in Canada, 5209

Skeleton, picture, 2439
 what it is, 2437, 4824
 why we have a skeleton, 3546

Skiddaw, mountain, picture, 5017

Ski-ing, in Canada, 1753, 5210
 with picture, 2513

Skimmer, bird, 1630

Skin, a cut greatly magnified, picture, 1909
 as a unit of measure, 5150
 can absorb oil, 1963
 for breathing, in lower animals, 1963
 produces hair and nails, 1961
 the organ of some of the senses, 1964
 the skin and its uses, 1583, 1909
 why it becomes brown in the sun, 3760
 why moisture can penetrate it, 4121

Skink, African lizard, 1219; picture, 1227

Skittles, a word game with skittles, 6062

Skoda guns, pictures, 5867, 5868

Skua, life-story, with picture, 1626, 1627

Skull, contains the brain, 2438
 how it has grown in man, 2541
 pictures, 2441, 2541, 2544

Skull-cap, plant, 4970; picture, 4968

Sky, looks like a dome, 2610
 what it is, and its distance, 3381, 4437
 why is Italy's sky bluer than ours, 5384
 why it is blue, 426
 why it is dull before a storm, 1987

Sky-dust, what it is, 2501, 4050

Skylark: see Lark

Sky-perspective, and stereoscope, 2610

Slaked lime, what it is, 1799, 1800, 4339

Slanica, salt mine, picture, 222

Slate, in Canada, 5600

Slate and pencil games, and pictures, 5113

Slavery, Abolitionist party formed, 2008
 Compromise of 1850, 2008
 Dred Scott Decision, 2009
 Dunstan protected slaves, 4709
 famous slaves, 2909
 Fugitive Slave Law, 2008, 3536
 has been done away with, 1099
 in America, 516, 1825
 in South America, 4506
 in the West Indies, 1878
 John Brown's raid, 2010, 3536
 opinions regarding, 2010
 pictures, 4711, 2909, 3009
 Republican party formed to fight, 2009
 Sir Samuel Baker's work, 4445
 slave who saved his master, story, 1914
 the Austrians were made slaves, 2528
 the friend of slaves, story, 3009
 the slave trade in Africa, 4252
 Thirteenth Amendment passed, 2022
 Thoreau's work for abolition, 1484
 Whittier's work for its abolition, 1482

See also Civil War; Negroes

Slaves, invaded Europe, 2522, 3623
 joined the Eastern Church, 3150

Sled, making a, 2349

Sleep, brain while we are asleep, 3379
 hearing when we sleep, 1575
 our thoughts when we sleep, 1365
 sleep with flowers in the room, 1370
 sufficient sleep, 3379
 summer sleep of animals, 6300
 what wakes people up, 425, 3435
 why babies require so much sleep, 3379

INDEX

- Sleep**, why our eyelids close during sleep, 1272
 why we cannot grasp a bar tightly when we first wake up, 5168
 why we go to sleep, 423
 why we sleep quickly in the dark, 1266
 winter sleep of animals, 6295
 with the face covered, 2234
 with the moon shining on us, 3378
Sleeping Beauty, story with pictures, 1681
Sleeping-cars, invented, 2669
Sleeping sickness, how it affects men, 3145
Sleep-walking, 157, 2672
Sleigh, in Canada, 5209; picture, 3745
Slender false brome, picture, 1338
Slidell, John, Confederate Commissioner, 2014
Slit, how to repair a slit, 3515
Sloane, Sir Hans, naturalist, 1162
Sloes, grow on blackthorn, 3450
Sloth, animal, 43, 49, 50, 862
 pictures, 51, 865
 the giant, 5570
Slug millipede, 3296
Slugs, how to get rid of them, 3278
Sluys, sea victory, 750
Smallpox, and vaccination, 2459
Smell, affects taste, 2208, 4627
 air-waves and smell, 3861
 in man and animals, 3720
 most things smell, 1571
 why a cold affects smell, 3240
 why things smell differently, 1572
Smirke, Sir R., built British Museum, 1162
Smith, Adam, life, and portrait, 4097, 4102
Smith, John, at Jamestown, 514
 picture, 519
 story of Pocahontas and, 4534

Smith, Joseph, and Mormonism, 1832
Smith, Samuel: see Poetry Index
Smith, Samuel Francis, author of song America, 2956
Smith, Sir Donald Alexander, life and work, 4300; picture, 4301
Smith Sound, view near, 52
Smoke, what becomes of smoke, 4337
 what it is made of, 2228
 what it is the result of, 916
 why it has no force, 5250
Smoke-rings, box that makes, with picture, 4674
 how they are made, 3466
Smollett, Tobias, life, 1731; portrait, 1725
Smolt, young salmon, 2680
Smooth meadow grass, and picture, 2979
Smooth snake, and picture, 1378, 1381
Smudgegraphs, and pictures, 4138
Smyth, Dr. William, sacrificed his life, 468
Snail, different kinds of snail, 4770
 how bees treat a snail, 2324
 makes its own shell, 914
 tooth of, magnified, picture, 2326
 why only empty shells are found, 3865
Snake, can do without food, 2456
 great snake family, 1373
 has no eyelids, 1272
 how snakes move, and picture, 4443
 pictures, 1375
 poison in its fang, 160, 4233
 snake and file, fable, and picture, 1793
 snake's parlour, tale, 1321
 winter sleep of, 6298
Snake-charming, how it can be done, 1378
Snakeroot, black: see Cohosh, black
Snake's-head, plant, 4964; picture, 4966
Snap, game, 4672
Snapdragon, plant, 1074; picture, 2823
Sneezing, why we sneeze, 718, 4628
Snipe, its family, 1958
Snp-snap-snorum, game, 4885
Snorro, first child born in America, 941
Snow, how it forms into waves, 2518
 how it warms our hands, 1643
 how snow changes a place, picture, 1129
 how snow protects plants, 2134
 snow and rain together, 2073
 snow on mountains, 3859
 takes beautiful forms, 2519
 the snow girl of sunny land, story, 2305
 what it is, 2509
 why it is white, 1133

Snow, why salt melts snow, 3864
Snowberry, picture, 3895
Snow-bunting, 2057
 in Canada, 3491
Snowdon, the elves of, legend, 465
Snowdrop, bulb root plant, 573
 how to treat, 1610; with picture, 733
 in gardens, 5272
Snowdrop and the dwarfs, story, and pictures, 2089, 2090
Snowflakes, birds, 3491
 lighter than raindrops, 3036
 picture, 2519
Snow-leopard, and picture, 139, 136
Snow man, pictures, 2517, 4891
Snow mountains, 2516
Snowshoeing, in Canada, 5209
Snow waves, picture, 2518
Snowy petrel, its nest, 1626
Soap, colour of soapsuds, 2236
 how it cleans things, 2236, 3234
 why the colour does not come off, 3758
Soap-bubbles, game, 3386
 how they hold together, and picture, 1778, 1779
 what to do with, pictures, 3386
 why they are round, 1779
 why they rise and fall, 1780
Soapstone, in Canada, 5600
Sobieski, John: see John III. of Poland
Society Islands, discovery, 1459
Sock, how to knit, and picture, 4609
Sock-eye, a salmon, 3897
Socotra, island in the Indian Ocean, 1876
Socrates, pictures, 1305, 4617, 4625
 story of his life, 1306, 5129
 what he said of death, 4745
Soda, what it is, 1801
Sodium, detected by the spectroscope, 2717
 exists in the sun, 2088
 in hydrochloric acid, 1797
 its colour when hot, 1860
 its weight, 1292
 what it is, 223
Sodium bicarbonate, how to make it, 1801
 in the blood, 1569
Sodium carbonate, its importance, 1798
 its strong alkali and weak acid, 1801
Sodium chlorate, what it is, 3971
Sodium chloride, how formed, 1797, 1800
 its strong alkali and acid, 1801
 what it is, 2344, 2698
Sofia, capital of Bulgaria, 3222
Soft brome, picture, 1336
Soil, full of microbes, 3342
 how to improve it, 2254, 4462
 how to prepare it, 719
 its uses, 3339
Solan goose: see Gannet
Solar system, changes taking place, 2279
 comets, meteors, and sky-dust, 2495
 from a nebula, 2862
 how it has grown, 307
 its story, 144
 picture, 1945
 sun discovered to be the centre, 1942
 sun's family of worlds, 2423
 what it consists of, 1946
Solder, what it is formed from, 1870
Soldier and sailor beetles, picture, 3893
Soldiers, armour, 157
Sole, fish, 206, 1172; picture, 205
Solferino, battle of, picture, 3021
Sollnen, salt-field, picture, 224
Solttaire, bird, 1430; picture, 1425
Solomon, king of Israel, 6218
Solomon's seal, a plant, 2841, 5271
 false: see Spikenard, wild
Solon, an Athenian, his life, 1301, 5126
 reproved by Aesop, 2910
Solway Moss, Scots routed, 3086
Somaland, where it is, 4262
Song that found a king, 6077
Songs, American, and song-writers, 2953
 D've ken John Peel? history of song, 5493
 writers of the songs, 3737
Song-thrush, 2058; egg, picture, 1744
Sonnet, its number of lines, 343
Sons, the tale of the dutiful sons, 2301
Sons of Daniel Boone, organised by Dan Beard, 3583
Sons of Liberty, 979

- Sons of the Revolution**, instituted Flag Raising Day, 4467
- Soot**, enriches the soil, 2254
- Soot-water**, how to prepare it, 3398
- Sophocles**, great poet, 1302
- Sorel, Canada**, history, 5428
- Sorrel**, mountain, 4834; picture, 4832
- varieties, 3051
- wood, 4111, 4285; picture, 4291
- Soult, Marshal**, in Peninsular war, 4362
- Sound**, behaviour of a sound, 4913
- effect of covering ears with hands, 1643
- effect of empty room on voices, 1643
- effect of overtones on sound, 4864, 4913
- empty vessels and sound, 3756
- flame and sound-waves, and picture, 4917, 4918
- how a sound is heard, 509
- how sound travels, 4581
- how sound-waves travel, picture, 3867
- impossible without air, 3863
- interference in sound-waves, 4918
- its effects go on for ever, 5169
- its pitch, 4582, 4759
- its reflection, 4583, 4584, 5021
- its refraction, 4584
- König's flames, picture, 4913
- lowest pitched sound, 3233
- music and noise, 4757
- rate of travelling, 4582; with picture, 4581
- sound and the scratching of a pin, 3385
- sound-waves of an orchestra, 4758
- thinking by sound, 4944
- travels more slowly than light, 777, 3687
- wave in the air, 1057, 3762
- waves produced by instruments and voices together, 4917
- what it is, 4581
- why sound travels well over water, 2455
- why the pitch of a note varies, 2717
- why we cannot feel sound, 3233
- See also **Hearing and Noise**
- Sound, The**, strait, 3598
- Soundboard**, why it is used in a piano, 1017
- South Africa**, how it came under British rule, 1765, 4038
- scenes in, pictures, 1764, 1767
- war: see **Boer war**
- South America**, colonised by the Spanish, 4502
- exploration, 4502, 4504
- history, 4497
- its states, 4500
- left to Spanish and Portuguese, 4036
- map, 4496
- native way of measuring heights, 5666
- people and scenes, pictures, 4503, 4567, 4575
- physical features, 4497, 4500
- plants and animals, 4498
- railways, 4569, 4572, 4574
- Raleigh's expedition to, 5395, 5396
- South America of to-day, 4567
- struggle for independence, 4505
- South Australia**, country, 1360
- South Carolina**, Civil War emblems, 5440
- its industries, 5984
- secedes, 2010, 3536
- threatens war with the Union, 3535
- threats of nullification, 1828
- why called Palmetto State, 5440
- South Dakota**, admitted, 3537
- Southern States**, which they are, 5983
- Southey, Robert**: see **Poetry Index**
- South Island**, New Zealand, 1464
- Southland**, province of New Zealand, 1464
- South Magnetic Pole**, 4438, 5254
- Southworth, Mrs. Emma**, life, 2043
- South Pole**, 410, 5167
- discovery of, with pictures, 5051
- exploration: see **Polar exploration**
- Sovereigns**, why people are not allowed to make them, 3034
- Sow-thistle**, 4112; pictures, 3975
- Space**, how far does it extend, 5484
- how to measure space, 3670
- if we should go on travelling upward, where should we end? 5575
- is infinite, 1771, 4232
- what is it made of? 5484
- Spade**, for digging, 233
- how to mend a wooden spade, 4249
- Spade the gardener**, game, 4885
- Spain**, added to the German states, 2527
- attacked the Moslems in Africa, 4260
- bull-fighting, 3362
- climate, 3352
- colonies in the West Indies, 2184
- conquered by Rome, 5264
- flag, picture in colour, 1640
- fleet destroyed by Blake, 1027
- French driven out of Spain, 2276
- history and geography, 3351
- in America, 4036
- interests to be considered in treaty, 1387
- loses Florida, 886
- Moorish work, 3356
- Philip II., the gloomy king of, 5498
- possessions in Africa, 4262
- power in South America lost, 4505
- royal standard, 1640
- sent the Armada against England, 848
- soldiers marching, picture, 1879
- Spain and Portugal, map, 3353
- takes Florida, 1387
- towns and trade, 3361
- war with, and results, 3538
- war with Great Britain, 1095
- war with Netherlands, 3460
- won by the Romans, 416
- Spalato**, ruins of Diocletian's palace, 534
- Spanish chestnut-tree**, and picture, 3652
- Spanish iris**, 5272
- Spanish language**, in South America, 4568
- Spanish Main**, what it was, 4035
- Spanish Succession, War of the**, 2540
- date of the war, 3358
- its cause, 2530
- Sparrow**, 2216, 2328; picture, 2217
- varieties in Canada, 3492
- Sparta**, city and state, 1304, 5124, 5129
- gymnasium, picture, 5123
- Spartacus**, appeal to gladiators, 5505
- story of his life, 2912
- Spartans**, drove back the Persians, 1302
- refused to aid the Athenians, 1803
- their last stand at Thermopylæ, 5062
- what "to be a Spartan" means, 5126
- Spasms**, there are two kinds, 4440
- Spawn**, of mushrooms, 4753
- Speakers**, are they the best thinkers, 3832
- Speaking-trumpet**, 4584, 5022
- Specific gravity**, of gases, 3816
- of iron, picture, 3813
- of solids and liquids, 3816
- what it is, 3814
- Specific gravity bottle**, what it is, 3815
- Speckbacher, Albert**, the story of, 320
- Spectacles**, how do they help us to see? 5639
- their use, 2319, 4297, 4402
- Spectator, The**, newspaper, 4676
- Spectroscope**, in astronomy, 1949, 2716
- picture in colour, face 2719
- Spectrum**, how it is made up, 4508
- picture in colour, face 2718
- there are two kinds of spectra, 2862
- what it is, 2716, 5041
- Spectrum analysis**, 5042
- Speech**, effect on air, 349
- how it is governed by the brain, 3779
- its substitutes among animals, 5325
- man probably always talked, 3973
- speaking and hearing, 3953
- talking and singing, 4073; with picture, 4073
- why a baby cannot talk when born, 2873
- why it is pleasant and musical or otherwise, 5644
- Speed**, time and space together, 3672
- Speedwell**, germander, 4292; picture, 4287
- plant, 2042
- Speke, John H.**, African explorer, 284
- monument in Kensington Gardens, 4252
- Spelling bee**, game, 237
- Spencer, Herbert**, his thinking power, 5019
- life, 857; and portrait, 851
- on dissipation of energy, 4368
- on speaking and singing, 4073
- on the cell, 783
- on the law of gravitation, 3547
- on the study of the mind, 4734
- theory about the brain, 3780
- what he said of pleasure, 4746
- what he thought of the universe, 3840

INDEX

- Spenser, Edmund**, characters in "Faerie Queene," representing virtues and vices, 5750
- Faerie Queene**, 687
- his "Shepherd's Calendar," 5746
- story of his life, 3328, 5750; picture, 3329
- Spermaceti**, from the sperm whale, 1085
- Sperm whale**, 1082, 1085; picture, 1083
- Sphenodon**, its life-history, 1217
- picture in colour, 1225
- Sphinx**, great piece of sculpture, 4159
- near the pyramids, 5004
- pictures, 2733, 4163, 5006
- riddle of the Sphinx, story, 2733
- what it is built from, 2336
- what it is like, 4785
- Sphinx moth**, 2990
- Spice Islands**, early trade in, 4036
- Magellan's westward way, 4502
- taken by the Dutch, 1879
- Spider**, its web, 306, 914, 1170
- life-story, 3298
- pictures, 2322, 2326, 3295, 3299, 3301
- web, picture, 306
- why we fear spiders, 4233
- Spider-crab**, 2584
- Spiderwort**, plant, and picture, 2564
- Spies**, trial of the spy, a story, 4281
- two spies of the Revolution, 3811
- Spikenard**, wild, 2841; picture, 4836
- Spinach**, how to grow it, 3922
- Spinal cord**, 2442, 3563
- Spinalunza**, town saved by children, 964
- Spine**: see Backbone
- Spinifex**, an Australian grass, 1364
- Spinning machinery**, invention, 1096
- Spinning pictures**, how to make them, and pictures, 5455
- Spinoza, Baruch**, his life, 4624
- on death, 4745; pictures, 4623, 4625
- Spiny dog-fish**, picture, 2447
- Spiral nebulae**, and picture, 2862, 2863
- Spires**, of churches, pictures, 1163
- Spirits**, contain ethyl-alcohol, 1872
- why they burn, 5022
- Spirit varnish**, how to use it, 2256
- Spittle**, what it is, 2205
- Spitzbergen**, its exploration, 4724
- Spleen**, what it is, 1443
- Splices**, and picture, 3283, 3284
- in a stick, 5353
- Sponge**, how other creatures live in it, 2340
- how to clean a sponge, 4456
- its life-story, and picture, 4236
- picture, 51
- what it is, 4824
- why it holds water, 4824
- Spoonbill**, bird, 1956; picture, 1957
- Spoons**, game, 5000
- Spoons**, how the bowl is made, picture, 4740
- of various dishes, picture, 4735
- Spores**, of mushrooms, 4752
- Sports**, of Canadian Indians, 2773
- winter, in Montreal, picture, 1753
- See also Games**
- Spotted dog-fish**, picture, 2447
- Spotted flycatcher**, bird, pictures, 1744, 2217
- Spotted mosquitoes**, picture, 3143
- Spottsylvania Court House**, battle of, 2019
- Sprains**, how to cure them, 3397
- Sprat**, and picture, 205, 206
- how sprats are caught, pictures, 3766
- Spree River**, flows into the Elbe, 2750
- Spring**, coming of, a picture, 5630
- Spring-beauty**, description, 2837
- Springs**, hot, 587
- Spring tides**, how they are caused, 2281
- Spruce fir**, and picture, 3657
- in Canada, 5604
- value to Canadians, 5429
- Spurge-laurel**, description, 4418
- picture, 4420
- Square**, for marking wood, with picture, 338
- how to draw a square, 1213
- how to make pictures in squares, 2487
- queer pictures built from squares, 1073
- square puzzle, and picture, 5112, 5202
- to form a, with pieces of card, 5666
- train made from, and picture, 1818
- Squids**, cuttle-fish, 2450
- Squills**, in gardens, 5272
- Squinting**, its cause, 3544
- Squirrel**, 768
- dwelling, 5417
- pictures, 51, 767, 3894
- Squirrel-corn**, description, 2837
- Sringer**, Cashmere, bridge, picture, 31
- Stable equilibrium**, what it means, 3673
- Stadacona**, Indian village, on site of Quebec, 536
- Staff of Life**, bread called the, 5644
- Staffa**, island, picture, 405
- Stag**, has fine horns, 382
- picture, 4755
- stag in the ox-stall, fable, and picture, 4805
- the stag looking into the water, fable, 2339
- Stag-beetle**, pictures, face 3140, 3894
- Stage**, how to build, and picture, 4771
- Stag Waterfall**, pictures, 409, 4341
- Stains**, how to take stains out, 4456
- Stalactites**, and pictures, 405, 1296, 4816
- Stamen**, of flower, and picture, 3740
- Stamp Act**, passed, 743
- what it was, 979
- Standard**, battle of the, 594, 3080
- Stand-up mega**, game, 5106
- Stanley, Lord**, governor-general, 1248
- Stanley, Henry Morton**, explorer, 283
- explored the Congo, 4254; picture, 284
- Stanley, William**, and the Great Plague, 625
- Stanley Falls**, on the Congo, 4254
- Stanley Park**, views in, 5429, 5610
- Starch**, a carbo-hydrate, 1872
- in our bodies, 2345
- made by green leaves, 2695
- turned into sugar by saliva, 2206
- why it stiffens clothes, 4443
- Starfish**, 661, 1410, 2342
- pictures, 51, 1414, 2337
- Star-flower**, description, 2839
- Stark, John**, defeats British at Bennington, 988
- joins the Revolutionary Army, 984
- Starling**, bird, 2214
- nests of, 5783
- pictures, 1744, 2211
- Star of Bethlehem**, flower, 5272
- Star (The)** that came to earth, 5887
- Stars**, are all in movement, 1131
- are suns, 1944
- collisions among, 5384
- distance from each other, 1270
- do they really twinkle? 5483
- falling stars are not real stars, 3687
- guided travellers, 1942
- how they move, 2717
- how to guess their size, 4438
- how to measure the distances, 2614
- legends of the stars, 3313
- light after they cease to exist, 1941
- light that explains the stars, picture in colour, face 2718
- may be divided into three groups, 2719
- might cause nebulae by colliding, 2864
- origin of names, 2235
- quality of their light changes, 2088
- shape of the stars, 2080, 2879
- star seen at time of Armada, picture, 1941
- stars at different seasons, pictures, 2611, 2613, 2615, 2617
- supposed to control man's fate, 1940
- telegraph to the stars, picture, 1943
- the colour of the stars, 2715
- their mass, size, and number, 2616, 4437-38
- their use, 3437
- there are many kinds, 1948
- the stars as we see them, 2609
- what they are made of, 910, 1949; picture in colour, face 2719
- world of stars has probably a limit, 1774
- why they are not seen by day, 304
- why not always visible, 3761, 4601
- why they resist gravitation, 3544
- See also the Names of Stars**
- Star-Spangled (The) Banner**, history of song, 1399, 2955, 4465
- Statesmen**, twelve British, 2379

- Statue**, what it is, 4159
Stavanger, very old town, 3602
Steam, how it drives an engine, picture, 1569
 how it gets its power, 1569, 5250
 in ships, 73, 74
 why it is not yellow, 2235
 why it puts a light out, 3758
 why steam comes from hot water, 1574
Steamboat, Canadian Pacific lines of steamers, 2264
 Hudson Bay Railway's, 2264
 invention of, 2667, 3534
 pictures, face 73
 what is wrong with this steamer? puzzle, and picture, 3510, 3616
Steam-engine, came into use, 613
 of cardboard, and picture, 3917
Steamer-duck, bird that cannot fly, 1430
Stedman, Edmund Clarence: see Poetry Index
Steel, gets tired, 3977
 how buildings are made of, 622
 how it is made, 1869, 1870
 how steel is got from iron, 1292
 manufacture of, with pictures, 5537
 moved by magnets, 5471
 power to resist stretching, 3695
 production of in U. S., 2660, 2662
 sparks made when steel is struck, 1061
 used for bridges, 19, 3695
Steele, Richard, life, and portrait, 4675
 Steele and Addison, picture, 4677
Steel pens, how they are made, pictures, 3402
Steeplechase, game, 724
Steffe, William, said to be author of the song John Brown's Body, 2956
Stegosaurus, giant lizard, picture, 44
Stein, Dr., explored Central Asia, 108
Stella, meaning of name, 2507
Stella, the lady Swift loved, 1728
 the stewardess of the story, 320
Stem-stitch, how to do it, 2133
Stencilling, how to do it, 1921, 4250
Stephen, king of England, 594, 2702
 made king, 2532
Stephen, St., king of Hungary, 2854, 5712
 festival of, 5714
Stephen, Sir George, life-work, 4302
Stephens, Alexander H., vice-president of the Confederacy, 2010
Stephenson, George, his engine, and picture, 613
 his life, 609; with pictures, 609, 611
 his son, 616
 made the first steam-engine to run on railway, 613
Stephenson, Robert, built the Britannia Bridge, 19
Steppes, plains of Russia, 3074
Stereoscope, what it does, 2460, 2610
Sterne, Laurence, life, 1730; portrait, 1725
Stettin, port in Germany, 2750, 2752
Steuben, Baron, picture, 981
Stevens, Alfred, sculptor, 4162
Stevenson, Robert Louis, grave of, at Vailima, 5774
 his life, 2316
 in Samoa, 2190
 poems: see Poetry Index
 portrait, 2307
 portrait relief, with pictures, 4841, 4848
Stewart, Charles, at Tripoli, 2900
Stewart Island, New Zealand, 1464
Stick, noise when swung in the air, 4827
 two ways of splicing a, with picture, 5353
 why a stick floats, 684
 why a stick holds together, 617
 why does a stick seem to bend when put into a pond? 5685
Stickerchief, game, and picture, 3513
Stick insect, 3412; pictures, 3407, 3409
Stickleback, can live in sea or river, 2675
 its life-story, and picture, 2683, 2684
Stilt, bird, what it is like, 1958
Stilts, how to make, and pictures, 4883
Sting-bull, fish, and picture, 209, 210
Stinging-nettle, description, 4292
 picture, 4290
Stings, how to treat them, 3397
Stirling Bridge, battle, 118
Stitch, in the side, its cause, 2622
Stitching, and pictures, 456, 717
Stoat, 140; picture, 3894
Stock, flower, 4110, 5270
Stock-dove, lives in British woods, 2214
Stock Exchange, of New York, 4308
Stockholm, town, 3600; picture, 3595
Stocking, tale by Christmas stocking, 2142
Stockton, first railway built, 614
Stock-yards, Chicago, picture, 2659
Stodart, M. A.: see Poetry Index
Stoddard, E.: see Poetry Index
Stomach, how it is affected by the brain, 3109
 its formation and work, 2343
Stomach-ache, how it is caused, 2346
Stomata, what they are, 228
Stomoxys, small black fly, 3144
Stone, Frank, his picture, The Duet, 3911
Stone, M., his picture of James Watt, 611
Stone, builds up living creatures, 4821
 for building, in Canada, 5600, 5604
 for building, in U. S., 2661
 stone travelling in a circle, picture, 3674
 tools of, found in this country, 192
 what a stone is, 915
 why a hammer will break a stone, 2880
 why a stone comes down again, 4549
 why a stone sinks, 685
Stone Age, 622, 1292
Stone bramble, picture, 4109
Stonechat, 2057; pictures, 1744, 2053
Stone-clover, description, 4288; picture, 4286
Stonecrop, biting, picture, 4287
 garden varieties, 5271
 how to treat, 1074, 3949
Stonehenge, and the sun's movements, 1939
 its history, 5003; picture, 5003
 what it may have been, 194
 what we learn from it, 4116
Stone icicle, in caves, 410
Stone in the road, 6191
Stone weapons, how made, picture, 5995
Stones, precious, in Canada, 5600
"Stonewall Jackson", nickname of General T. J. Jackson, 2011, 2013
Stool-ball, game, with pictures, 4029
Stopper, to remove a glass, 5523
Store, that never grew less, legend, 3208
Stories, by title
 Achilles and the Queen of the Amazons, 962
 Adventures (the) of Reynard the Fox, 5310
 Aladdin and the wonderful lamp, 81
 Alexander and the pirate, 5308
 Alexander's battle with the lion, 5313
 Ali Baba and the forty thieves, 183
 Alice and the Queen of Hearts, 3115
 Alice in Wonderland, 2929
 Amy Robsart, 3854
 Androcles and the lion, 4704
 Andromeda, 3313
 Anemone, the, 190
 Angel of the dimples, 2168
 Angler (the) and the little fish, 3853
 Ant (the) and the grasshopper, 2141
 Ape (the) and the wedge, 5421
 Arcadian (the) boar, 5163
 Ass (the) in the lion's skin, 3853
 Avocat (l') et les poires, 4644
 Babes in the wood, 1523
 Bag (the) of peas, 5654
 Ball (the) in the hollow post, 5344
 Baths (the) of Bath, 1108
 Battle with the giant, 5164
 Bear (the) in the well, 4934
 Beauty and the Beast, 2735
 Belling the cat, 463
 Biddenden Maids, the, 4277
 Big jar (the) of water, 5344
 Bird-girl (the) with golden wings, 1796
 Birds (the) with the brazen wings, 5163
 Black Diamond, 3579
 Blue (the) bird, 3206
 Box (a) of good luck, 2304
 Boy (the) at the giants' castle, 713
 Boy (the) who cried "wolf," 3310
 Boy (the) who found light, 5344
 Boy (the) who had no paper, 5344
 Boy (the) who lost his shadow, 5693
 Boy (the) who slept in the king's chair, 4642
 Boy (the) whom France forgot, 330

- Stories, Boys (the) and the frogs, 2303**
 Brahman (the) and the goat, 5421
 Brahman (the) and the pots, 5421
 Brave (the) boy of Knaresborough, 1109
 Brave (the) little dog of the wood, 5160
 Brave (a) little Quakeress, 4531
 Bread-winner (the), 6002
 Brer Rabbit and Brer Fox, 187
 Brer Rabbit and Miss Cow, 188
 Brer Rabbit and Mr. Bear, 187
 Brer Rabbit and the tar-baby, 3851
 Brer Rabbit helps Brer Tortoise, 4702
 Brer Rabbit's riding-horse, 4643
 Brer Tortoise helps Brer Rabbit, 4702
 Bride (the) of the forest, 1067
 Bride (the) of the wandering prince, 1190
 Brownie (the) of Snaefell, 2377
 Burial (the) of a city, 5314
 Byard's famous leap, 3208
 Capture (the) of the sacred stag, 5163
 Cassiopeia, 3313
 Cat (the) and the mice, 4274
 Cat (the) and the parrot, 2494
 Cat (the), the eagle and the sow, 4805
 Catching a thief, 2143
 Cauld (the) lad of Wilton Hall, 3648
 Cepheus, 3313
 Challenge (the) of the king, 870
 Chest (the) of Caller Pit, 4277
 Cheval (le) et l'âne, 4644
 Chien (le) et l'âne, 4644
 Child Charity, 1043
 Child Roland to the dark tower came, 5081
 Child (the) who came by night, pictures, 5882
 Choice (the) of Marpessa, 1432
 Christmas Carol, 2159
 Christmas Eve, a tale of, 2142
 Chrysanthemum, 1677
 Cinderella and the glass slipper, 818
 Cleansing the stables, 5163
 Clever (a) bad man, 4930
 Cobbler (the) and the elves, 712
 Cobblers (the) and the cuckoo, 2297
 Coming (the) of King Arthur, 1680
 Coming (the) of the king, 867
 Comment Gotham acquit une mauvaise réputation, 4705
 Conqueror (the) and the artist, 5312
 Conqueror's (the) triumph, 5308
 Cornflower, the, 1677
 Crab (the) and her mother, 3062
 Crane (the) and the wise crab, 4224
 Crock of gold in the plain of York, 1983
 Crossing-sweeper, the Bank of England, 1796
 Crow (the) and the pitcher, 3508
 Cunning (the) farmer and the dwarf, 4798
 Cunny rabbit and the lion, 461
 Days, the story of the, 83
 Dick Whittington and his cat, 326
 Dinner (the) at the inn, 5159
 Discontented (the) fir-tree, 3575
 Dog (the) and the ass, 2849
 Dog (the) and the shadow, 560
 Dog (the) and the wolf, 1979
 Dog (the) in the manger, 189
 Dog (the) of the underworld, 5164
 Dog (the) that came home again, 4799
 Dog (the) that knew his master, 4003
 Dog (the) that remembered Odysseus, 4221
 Dogs (the) that became friends, 5308
 Doña Beatrice, 5231
 Donkey's wish, the, 2378
 Dove (the) and the ant, 189
 Dragon (the) of St. Leonard's, 3648
 Duchess (the) who sat in rags, 4640
 Dutiful sons, the, 2301
 Eagle-girl (the) of the mountains, 711
 Earl's daughter and beggarman, 1322
 Elfín (the) hill, 4513
 Elves (the) of Snowdon, 465
 Emperor (the) and his servant, 1183
 Emperor (the) and the figs, 4935
 Emperor's new clothes, 3641
 Enchanted cave (the) of Richmond Hill, 1983
 Enchanted (the) horse, 955
 Enchanted thorn, the, 1677
 Face (the) no man could look on, 1049
 Fairies (the) and the hunchbacks, 1106
 Fairies (the) of the Willey How, 1321
 Fairies (the) of St. David, 2608
Stories, Fairy (the) fountain of Killarney, 3166
 Fairy Horn near Gloucester, 1983
 Fairy (the) maid of Van Lake, 2302
 Fairy (the) of the New Forest, 3648
 Fairy (the) tulips, 3208
 Fairyfoot, 4001
 Fairy's (the) revenge, 1432
 Faithful John, 4631
 Farmer (the) and his dog, 5313
 Farmer (the) and his sacks, 5654
 Farmer (the) and his sons, 2303
 Farmer (the) and the raven, 5998
 Farmer (the) and the stork, 2939
 Fat (the) and the lean, 5520
 Fight (the), with the dragon, 6070
 First (the) apple dumpling, picture, 6305
 First (the) boy in London, 5995
 First (the) home, sweet home, 6306
 First (the) men in England, 5993
 Fir-tree (the) and the bramble, 4274
 Fool (the) on the stool at Folkestone, 1320
 Foolish (the) Emperor and his fowls, 2301
 Fools and jesters and kings, 4278
 For a year and a day, 3648
 Forbidden (the) room, 1671
 Forget-me-not, the, 190
 Founding (the) of the kingdom, 869
 Four (the) wise ministers, 4927
 Four-leaved (the) shamrock, 1110
 Fowl (the) and the jewel, 560
 Fox (the) and the ass, 5520
 Fox (the) and the boar, 3852
 Fox (the) and the crow, 463
 Fox (the) and the faithful horse, 957
 Fox (the) and the frog, 4008
 Fox (the) and the goat, 3310
 Fox (the) and the grapes, 560
 Fox (the) and the lion, 3310
 Fox (the) and the mask, 2303
 Fox (the) and the wolf, 2378
 Fox (the) in the well, 463
 Frog, the proud, 877
 Frogs (the) and the bulls, 4804
 Frogs (the) who wanted a king, 462
 Geal (le) vaniteux, 4278
 Geese (the) who kept guard of Rome, 554
 Gelert, the faithful dog, 5208
 Geraint and Enid, 1977
 Giant (the) of Dalton Hill, 465
 Giant (the) of the Peak, 2377
 Giant (the) with three golden hairs, 1052 bis
 Giants (the) and the Isle of Man, 3166
 Giant's (the) plaything, 5341
 Girdle (the) of the Amazon Queen, 5164
 Girl (the) who saved a fort, 241
 Goat (the) and the lion, 3508
 Goblin (the) builders of Rochdale, 1321
 Goblins (the) in the goldmine, 328 bis
 Gog and Magog, 1318
 Golden apple, the, 1683
 Golden (the) apples, 5164
 Golden (the) bird in the king's garden, 874
 Goldilocks and the golden crown, 5075
 Good flea (the) and the bad king, 5305
 Goose (the) with the golden eggs, 3852
 Great Bear, the, 3314
 Great Dog, the, 3313
 Great race, the, 138
 Greedy (the) shepherd, 1046
 Grenouille (la) orgueilleuse, 4278
 Grey (the) terror, 6195
 Guests (the) at the feast, 5309
 Guy Fawkes and his plot, 1791
 Hanging the mayor at Bodmin, 1320
 Hansel and Grethel, 3305
 Hare (the) and the tortoise, 462
 Heir (the) and the will, 5159
 Hen (the) and the fox, 4008
 Hercules, 3314
 Heron (the), the cat, and the bramble bush, 2744
 His Master's Son, 5096
 Hop-o'-my thumb, 1973
 Horse (the) and the ass, 2849
 Horse (the) and groom, 1793
 Horses for nothing at Westminster, 4636
 How Alexander crossed the river, 5313
 How a sultan found an honest man, 2745

Stories, How Gotham got a bad name, 4130
 How Napoleon came from Elba, 312
 How Napoleon rode from Waterloo, 3504
 How Peter found his shadow, 2843
 How Rip van Winkle went home, 4800
 How the bad news reached the king, 4273
 How the children saved the bears, 6000
 How the children went home again, 2848
 How the French reached Moscow, 2094
 How the mail coach began, 4380
 How the monks became very rich, 4635
 How the thief was found out, 4933
 How they got a holiday, 6310
 How Truth got to the bottom of the well, 3162
 Howleglass, the merry jester, 5309
 Hundred (the) thousand monkeys, 5655
 Hungry fox (the) and the kitten, 1525
 Iduna and the golden apples, 3581
 In the days when men were good, 2092
 Ironshod (the) woman, 5232
 Ivory (the) maiden who came to life, 962
 Jack and the beanstalk, 3159
 Jack, the giant-killer, 1794
 Jackal (the) and the lion, 5349
 Jackdaw (the) and the pigeons, 38
 Jackdaw, the vain, 877
 Jenny Martin, 5422
 Jeune (la) fée du Lac Van, 4130
 Jupiter and the Ass, 3311
 Kafir (the) and the lion, 5656
 King Arthur and his knights, 867
 King (the) of the cats, 2744
 King of the Golden Mountain, 4225
 King (the) of the Golden River, 1433, 1526
 King (the), the nobleman, and the peasant, 3647
 King (the) who came to Cashmere, 2745
 King (the) who could not sleep, 5347
 King (the) who was loved, 5312
 King Wren, 2377
 King's (the) guest, 5651
 King's (a) revenge on Cromwell, 4640
 King's (the) three questions, 6080
 King's (the) watchers, 4935
 Knight (the) and the wonderful stone, 2745
 Lady Agnes of St. Dunstan's Tower, 3312
 Lady Anne Grimston, story of, 1673
 Land (the) of the red daisies, 708
 Land (the) of youth, 2093
 Lark (the) and her young ones, 2378
 Lawyer (the) and the oyster, 4938
 Lawyer (the) and the pears, 2849
 Lily (the) maid of Astolat, 1185
 Lion (the) and the cat, 5421
 Lion (the) and the deer, 5520
 Lion (the) and the four bulls, 3508
 Lion (the) in love, 4804
 Little Claus and Big Claus, 323
 Little Goody Two Shoes, 5157
 Little Ida's flowers, 3505
 Little (the) Lombard sentinel, 4936
 Little (the) maiden of the lake, 4005
 Little (the) man and the drums, 5207
 Little (the) man by the secret shore, 4928
 Little (the) pixies of Land's End, 1796
 Little princes in the tower, 1980
 Little Red Riding Hood, 2140
 Little (the) red shoes, 332
 Little (the) spinner at the window, 5419
 Little tiny Thumbeline, 3500
 Lohengrin, or The Swan-Knight, 5093
 Lonely (the) old woman of Morocco, 5316
 Lord (the) of the lions, 2608
 Lords (the) of the grey and white castles, 1807
 Lost (the) boys in Never-Never-Land, 2844
 Loup (le) et la cigogne, 4278
 Love (the) of a mother's heart, picture, 5885
 Love laughs at locksmiths, 1525
 Lover's (the) Bridge, at Glaisdale, 1109
 Luck (the) of Edenhall, 3166
 Luck (the) of Simple Jack, 2740
 Mad bull (the) of Crete, 5164
 Mad (the) tea-party, 3055
 Magic box, the, 5078
 Magic boy (the) fiddler of Sicily, 557
 Magic carpet, the, 1683
 Magic pen (the) of truth, 2092
 Magic (the) tinder box, 4127
 Maid (the) of Ulswater, 1166

Stories, Man (the) and his negro servant, 4805
 Man (the) in the Moon, 4276
 Man (the) who broke the news, 6201
 Man (the) who disappeared, 1112
 Man (the) who drove downstairs, 5694
 Man (the) who gave away, 2166
 Man (the) who knocked at the gates, 5307
 Man-eating horses, 5164
 March (the) of the Ten Thousand, 5076
 Master (the) and his scholars, 5312
 Mercury and the woodman, 2939
 Mermaid (the) of Lizard Head, 1321
 Mermaid's (the) pool, 465
 Merry (the) cobbler and his coat, 2372
 Merry mind, the little fiddler, 4375
 Midas, the king with the golden touch, 550
 Miller (the) and his pets, 3847
 Minstrel (the) Queen of Spain, 1432
 Miss Dollie and Captain Blue, 5071
 Miss Goose's washing, 4703
 Mona and the forsaken merman, 958
 Months, story of the, 4515
 Mother Shipton, 2096
 Music (the) of the willing heart, 5204
 Mysterious (the) portrait, 5161
 Napoleon's wonderful escape, 4227
 Nouredin and the wonderful Persian, 2739
 Oies (les) qui gardaient Rome, 3855
 Olaf of Orchard Farm, pictures, 5877
 Old (the) nound, 3124
 Old (the) man and his sons, 3062
 Old Scarborough, 1320
 Old (the) Women of Brighton, 1108
 Orion, 3313
 Pair (a) of magic slippers, 2606
 Pair (a) of old boots, 4275
 Pair (the) of new boots, 6201
 Pansy, the, 190
 Parson (the) and his clerk at Dawlish, 1985
 Partners, 4959
 Passing (the) of King Arthur, 3311
 Peacock (the) and Juno, 4008
 Peasant (the) and the three robbers, 5424
 Pegasus, 3313
 Penelope's marvellous tapestry, 962
 Perseus, 3313
 Peter Pan, 2843
 Peter Simple, 2028
 Pigeon (the) and the magpie, 2744
 Pits (the) of Woolpit, 3166
 Pleiades, the, 3314
 Plus (la) sage fille du Wessex, 4007
 Pocahontas, 4533
 Poet (the), the goblin, and the donkey, 2377
 Pope (the) who ran away, 459
 Prince (the) who was poor, 2369
 Prince's (the) five servants, 4271
 Princess (the) and King Grislybeard, 1189
 Princess (the) of the ivory castle, 2092
 Princess (the) who became a goose girl, 2492
 Princess' (the) golden ball, 1317
 Princess' wedding feast, 5082
 Proserpine, 5316
 Proud (the) king of Kamera, 1525
 Proud lady (the) who turned a somersault, 5231
 Punch and Judy, 1907
 Puss-in-boots, 1105
 Queen (the) who hid by night, 4638
 Queen (a) who was turned away, 4642
 Quest (the) of the Golden Fleece, 185
 Race (a) with death, 4958
 Raid (the) of the witches, 815
 Rapunzel's golden ladder, 2306
 Rich (a) man's diamond, 4934
 Riddle (the) of the Sphinx, 2738
 Rip van Winkle in the mountains, 4695
 Robber (the) and the monk, 6201
 Robin Hood and his merry men, 2601
 Robin Round Cap Well, 1321
 Roi (le), le noble, et le paysan, 4008
 Rose, the, 190
 Rose (the) maiden, 1114
 Rose of Jericho, 1677
 Rosy apple, the, 5345
 Rum-pel-stilt-skin, 553
 Sacrifice (the) of Marcus Curtius, 2301
 Sad (the) heart of Little Trott, 3209
 St. George and the Dragon, 960
 St. Keyne's Well, 4277
 St. Vincent's Rocks, 3282

INDEX

Stories, Santa Claus, 2146

Saving five hundred years, 6002
 Scramblepipe tries to understand, 3644
 Search (the) for a happy man, 5689
 Search (the) for the real princess, 324
 Selling the sun for a sovereign, 6002
 Shepherd maid (the) and the sweep, 4633
 Shop Window, a tale of a, 5691
 Silent (the) princess, 4797
 Silkie (the) wife in the Shetland Isles, 556
 Simmerdale Water, 465
 Sindbad the Sailor, 811
 Sir Galahad, Vision of, 371
 Sir Tristram of Lyonesse, 3211
 Slaying the lion, 5163
 Sleeping beauty, the, 1681
 Sleepy student, the, 5344
 Snake (the) and the file, 1793
 Snake (the) with a hundred heads, 5163
 Snake's (the) parlour, 1321
 Snowdrop and the dwarfs, 2089
 Snow girl (the) of sunny land, 2305
 Soldier (the) and his judge, 5313
 Son (a) of a gun, 3348
 Son (a) who did his duty, 5308
 Son (the) who returned home, 5998
 Song (the) that found a king, 6077
 Stag (the) in the ox-stall, 4805
 Stag (the) looking into the water, 2939
 Star (the) that came to earth, 5887
 Stars, an Indian legend of the, 3313
 Steadfast (the) tin soldier, 2305
 Stone (the) in the road, 6191
 Stone (the) that gathered no moss, 5998
 Store (the) that never grew less, 3208
 Stories told in Chinese school books, 600c
 Stories told in India 3,000 years ago, 6200
 Story (the) that had no end, 4222
 Strongest (the) thing, 4223
 Tale (a) of many lands, how Baulfour the
 beautiful waited a hundred years, 6071
 Tale (the) of Bob Singleton, 4700
 Tale (the) of a slave, 6004
 Thief (the) and the dog, 3852
 Thief (the) who turned policeman, 5073
 Three (the) bears, 1187
 Three (the) little pigs, 4219
 Three (the) maidservants, 2096
 Three nights in the enchanted castle, 558
 Tiger (the) and the traveller, 5421
 Tiger (the) that came in the night, 6075
 Tiger, the Brahmin and the Jackal, the, 3164
 Tiger woman (the) of the jungle, 5316
 Timid Hare, the, 4522
 Tom Thumb, 706
 Tortoise (the) and the eagle, 3062
 Town (the) mouse and the country mouse, 3124
 Travellers (the) and the bear, 4274
 Treasure (the) of Rhampsinitus, 1906
 Treasure (the) of the poor, 2742
 Trial (the) of the spy, 4281
 Twelve dancing princesses, face 328
 Two (the) friends, 5312
 Two (the) frogs, 3508
 Two (the) loaded asses, 2141
 Ugly dog (the) that became an angel, 5306
 Ugly duckling, the, 1678
 Uncama's adventure, 5349
 Unhappy king (the) of Persia, 816
 Unknown Hero, 6069
 Vase (the) from the Arabian Sea, 556
 Villager (the) and the viper, 3310
 Wandering Jew, the, 820
 Wandering shepherdess (the) of the moors, 2095
 Warning (a) to dancers, 2301
 Wasps (the) in the honey-pot, 5520
 Water (the) of life, 4373
 Web (the) of cloth, 5344
 When did you last see your father? 4806
 When the blind led the blind, 1982
 When the fire went out, 6308
 When the treasure was stolen, 4639
 White cow, the, 2744
 White lady (the) of Longnor, 465
 White (the) lily, 1068
 Why the swallow builds on the wall, 6198
 William Tell, 1674
 Willow-pattern plate, the story of the, 329
 Wind (the) and the sun, 3853
 Wind (the) sings down the chimney, 5342
 Wise (the) and foolish fairies, 4223

Stories, Wisest (the) maid in Wessex, 230c

Wishing table, the, 1904
 Witch (the) of the forest tree, 710
 Witch's (the) ring, 464
 Wizard's (the) castle in the air, 1110
 Wolf (the) and the crane, 560, 877
 Wolf (the) and the kid, 2141, 2939
 Wolf (the) and the lamb, 1793
 Wolf (the) in sheep's clothing, 463, 2303
 Woman (the) and the empty cask, 3853
 Wonder (the) book, 5652
 Wonderful (the) friends, 6192
 Wooden (the) daughter of Descartes, 3210
 Wooden (the) homes of Tunbridge Wells, 1109
 World (the) on a table, 5206
 Yellow (the) dwarf, 1050

See also Books — Child's Story of Famous Books

Stork, pictures, 51, 1953, 1955
 what kind of bird it is, 1955
 Stormy petrel, and picture, 1626, 1627
 Story, Julian, an artist, 4842
 Story, William Wetmore, sculpture of, 4842
 Story, that had no end, 4222
 Story-tellers, great men, 1725
 great women, 2591
 Stove, the Franklin, 2667
 Stowe, Mrs. Harriet Beecher, home, a picture,
 2045
 life and work, 1483; with portrait, 2044
 pictures, 1475, 2043
 poem: see Poetry Index
 Strafford, Earl of, life, 1888, 1892
 pictures, 1895, 1896
 Strains, how to cure them, 3397
 Straparola, G. F., wrote fairy tales, 1467
 Strassburg, town, 2528, 2754
 Straford, Roman name, 198
 Strathcona, Lord: see Smith, Sir Donald
 Staus, Oscar S., diplomat, 6226
 Strauss, Johann, composer, 3252
 Straw, how to support a coin on straws, and
 picture, 98
 what to do with a bundle of, 5451
 Strawberry, contains much water, 1169
 how its fruit is made up, 4110
 how to grow, 3616, 3726, 3922
 where it is grown, 641
 Strawberry tree, its family, 4112
 Strawboard, what it is, 333
 Stream, its current, 4231
 Street, what is wrong? puzzle, 4766
 Stretching, why we stretch, 778
 Strikes, explanation of, 4092
 String, things to do with, 5899
 Stringed instruments, vibration, 4913
 Strong, J., rescued from slavery, 4646
 Strongest thing, fable, and picture, 4223
 Strong-room, description of safe-deposit vaults,
 with pictures, 5371
 Strutt, Hon. B. J., and radium, 638
 Stuart, Charles Edward, attempted to become
 king, 1029, 1496; portrait, 1499
 Stuart, Gilbert, life and art, 4148
 pictures by, 4153
 Stuart, James Francis Edward, claimed the
 throne, 1029
 Stuart, J. M., explorer, and portrait, 356, 357
 Stuart, Ruth McNery, sketch of, 2050
 Stuart kings, helped by Louis XIV., 2070
 times of the Stuarts, 1021
 Surgeon, fish, and picture, 201, 203
 Sturgess, Wm., his electro-magnet, 2121
 Sturt, Charles, explorer, 356; portrait, 357
 Stuyvesant, Peter, as governor, 521
 portrait, 519
 Submarine, based on the laws of equilibrium, 3838
 description, with pictures, 5585
 invented by Fulton, 2471
 picture, 2471
 toy submarine, and picture, 3387
 Submarine bell, fog warning, picture, 6290
 Submarine mines, picture, 4435
 Sucker, how to make a leather sucker, 936
 Sucking fish, 207
 Sudan, its history, 4258
 Suevic, steamship, picture, 1368
 Suez, Isthmus of, its use in the past, 4251
 Suez Canal, made Africa an island, 3004
 time taken to construct, 4258

Sugar, chief muscle food, 2626
 cultivation of sugar-cane, 693
 from maple, with pictures, 2461, 2463
 manufacture of, pictures, 694, 698
 produces alcohol, 1872
 sugar and salt, story, 5082
 used instead of salt, 5622
 valuable crop of the U. S., 2422
 where Demerara is produced, 1878
 where it comes from, picture in colour, face 692
 why does it dissolve quicker in hot water than in cold? 5578
 why it is a good food, 2100, 2699
 why it tastes sweet, 4230
 why red drops come when sugar is held to the gas, 3380
Suggestion, influence on actions, 5135
Sulaiman Mountains, 3932
Suleiman the Magnificent, 3156
Sulla, great Roman leader, 417, 5265
Sullivan, Sir Arthur, composer, 1996
 story of his life, 3252; portrait, 3243
Sully, Duc de, minister of Henry IV., 2070
Sulphates, how they are formed, 1798
Sulphur, non-metallic element, 1290
 tarnishes silver, 1776
 unpleasant smell when burnt, 1572
Sulphuric acid, a strong acid, 1801
 how it is formed, 1798
 its specific gravity, 3816
Sulphuric ether, very mobile, 2505
Sultan, how he found an honest man, 2745
Sumac, poison, 4494, 5626; pictures, 4493, 5623
 staghorn, 4494, 5442; picture, 5437
Sumerians, people of Mesopotamia, 4974
Summer, why summer is hot, 411, 3032
Summer-chafer, insect, picture, 3261
Summer-house, and picture, 4561
Sumter, Thomas, called the "Game Cock," 990
Sun, causes rivers to move, 5024
 centre of the solar system, 1942, 1943
 distance from the earth, 1578
 distance from the planets, 2424
 does not put out fire, 1372
 does not rise and set, 77
 eclipse of, 1863, 2086
 height of objects calculated by, 2224
 helps to supply nitrates to plants, 3341
 how a comet travels round it, 2496
 how important it is to us, 2, 230
 how it fades things, 3235, 4543
 how it gets its heat, 4437
 how its energy is degraded, 4367
 how its heat is kept up, 3431
 how much larger than the earth it is, 541
 how the heat of the sun affects us, 4180
 how was it discovered that the sun is bigger than the earth? 5686
 its light is stopped by the air, 3691
 its light passes through clouds, 1573
 its movements, 4438
 its rays through ice, 4179
 its tides, 33, 35, 2280
 lights the moon, 2219
 losing heat, 1370, 2283, 4120, 5044
 magnetism in the sun, 5254
 meteors travel round the sun, 2500
 moves, 5791
 nearest the earth in winter, 3240
 not hotter through glass, 2380
 no water in the sun, 3382
 shines all night in Norway, 3600
 some names of the sun, 2234
 the sun and his family, 143
 what it is made of, 5023
 what it owes its heat and light to, 426
 why it is brighter at noon, 3689
 why it makes the skin brown, 3760
 why it shines during rain, 4549
 why men thought it was moving, 78
 will become cold, 1367
 wonder of the sun, 2081

Pictures

distance across the sun's face, 542
 eclipse of the sun, 1862, 1865
 flames of the sun, in colour, 2087
 its rays, 5039
 men worshipping the sun, 83

Pictures of the Sun

rays passing through slab of ice, 4179
 shining at midnight in Norway, 3591
 sun and his children, 151
 sun, moon, and the tides, 32
 sun's crown of life, in colour, 2085
 with other worlds round it, 3
Sun-baths, taken as cures, 1909
Sun-bird, resembles humming-bird, 1745
Sunday, what the word means, 83
Sundew, feeds upon insects, 3539, 5031
 pictures, 3541, 5030
Sun-dial, picture, 1539
Sunflower, perennial plant, 572, 4112
Sunlight, boxful of sunlight, 2357
 how clouds stop sunlight, 3385
 how corn-lands are fed with the sunshine of the past, 3343
 how we can see sunlight, 3688
 how we dig up sunshine, 799
 kinetic energy from sunshine, 3552
 necessary for plants, 229
 stored by plants, 1267
 strongest power in the world, 286
 what makes its colours, 426

See also Sun

Sun-spots, proving the sun moves, picture, 2801
 their cause, 3241, 5254
 what is known of them, 2083
 what are, 5961
Superior, Lake, 1240; picture, 29
Superstitions, how stupid they are, 1271
Supreme Court, The United States, its powers, 1597
Surajah Dowlah, story of his cruelty, 1704
Surat, English factory set up, 1702
Surf swimming, description of, 5775
Surface tension, 1773, 1779
Surgeon's Daughter, The, story, 1495
Surinam toad, how it carries eggs, 1224
Surrey, Earl of: see Poetry Index
Susa, remains of palaces, 5060
 taken by Alexander the Great, 5065
Suspension bridges, with pictures, 20, 26, 3695
Suttee, custom among Hindoos, 1550
Suvorov, Alexander, Russian general, 3631
Sverdrup, Otto, portrait, 4725
Sverre, fought against the Baglers, 3594
Swallow, 1740, 2210, 2212
 pictures, 51, 1744, 2209, 2211
 varieties in Canada, 3493
Swallowtail butterfly, 2992; picture, face 2982 in colour
Swallow-wort, the Celandine, 2841
"Swamp Fox," sobriquet of Francis Marion, 985, 990
Swan, Joseph Wilson, worked on electric-lamp, 658
Swan, 1513, 1522, 2328; picture, 1521
Swarthmore Hall, near Ulverstone, picture, 5835
Sweat, what it is and does, 1911, 3690
Sweden, attacked Brandenburg, 2530
 claimed Pomerania, 2523
 flag, picture in colour, face 1640
 history and geography, 3591
 pictures, 3591, 3597
 war with Russia, 3596
Swedenborg, Emanuel, his vision, and portrait, 4622, 4625
Swedish Nightingale, the, nickname of Jenny Lind 5495, 5497
Sweep, boy sold to, picture, 3697
Sweetbread, pancreas, used as food, 2346
Sweet chestnut, pictures, 1970, 3652
Sweet gale: see Myrtle, bog
Sweet-gum, description, 5624; picture, 5627
Sweet marjoram, description, 4289; picture, 4291
Sweet pea, how to grow, 927, 1509
 its structure, 5269; picture, 5274
Sweets, how to make sweets, 3512
Sweet vernal grass, and picture, 1342
Sweet-william, 719, 3278, 5270
Sweyn, king of Denmark, 3594
Swift, Jonathan, famous writer, 2540
 life, 1728; portrait, 1725
 wrote *Gulliver's Travels*, 1309

INDEX

Swift, bird, and picture, 2211, 2212
chimney, 3494
Swift land crab, lives on the beach, 2586
Swimming, brave boy's remarkable swim, 4070
how to swim, and pictures, 3818, 3819
why easier in salt water, 1993
Swimming crab, 2584
Swiss Alps, picture, 2959
Swiss Guards, defence of Tuileries, 1804, 2272
Switzerland, of the telephone, 350
Switzerland, became independent, 2527
description of, with pictures, 5669
education, 2968
history, 2962
how it looks in winter, 2512
its flag, 2968; picture in colour, 1640
map, 2967
map of part of, 5670
physical features, 2959
pictures, 2512, 2961, 2965
railways and industries, 2698
roads made by Napoleon, 2276
ruled by Austria, 120
Sword-bill humming-bird, its beak, 1740
Swordfish, 1086; pictures, 51, 1085
Sword lily: see *Gladiolus*
Sycamore tree, and picture, 3188

See also **Buttonwood**

Sydney, New South Wales, 1356, 1360
Sydney, N. S., centre of coal industry, 5601
Symbol, what it is, 1370
Symington, William, built a successful steam-boat, and portrait, 2467, 2470
his steamboats, pictures, 2469
Symmer, E., discoveries in electricity, 2118
Sympathetic vibration, what it is, 4915
Sympathy, does it help us? 5639
influence on actions, 5135
Syphon, how a syphon works, 679
how it is made, 580
how water flows upwards, picture, 580
why it will empty a glass of water, 3947
Syphon barometer, picture, 3943
Syr Daria, river, 3932
Syria, conquered by the Arabs, 3876
part of Asiatic Turkey, 3873
railways, 3882
ruled over Palestine, 117
wars with Mesopotamia, 4974
Szechuen, province of China, 116

T

Tabb, John Banister: see **Poetry Index**
Tablecloth, how to make a stencilled table-cloth, and pictures, 1921
Table Mountain, picture, 1767
Table-square, in ribbon-work, 2133
Tacitus, a great historian, 528
Tadoussac, fur-trading post, 537, 5428
Tadpole, young frog, 662, 1224, 2456, 4234
Taft, William H., administration, 3538
as president, 2418
first governor of the Philippines, 2184
picture, 3532
Tagus River, 3352
Tahiti, young ladies, picture, 1463
Tallifer, a Norman minstrel, 691, 2064
Tallor-bird, nests of, 2216, 5784
Taiping rebellion, 114
Taj Mahal, tomb, 1550, 1702
pictures, 1551, 2457
Takin, newly discovered, 5572
Talavera, battle of, 3360, 4364
Tale (a) of many lands, 6071
Talegalla, name for brush-turkey, 1520
Tale of Two Cities, A., story of novel, 2135
Talisman, The, story of the novel, 1494
Tall fescue grass, picture, 2979
Tallow dip, and the black salt, story, 481
Talnut stories, bear in the well, and picture, 4934
dinner at the inn, and picture, 5159
emperor and figs, and picture, 4935
heir and the will, and picture, 5159
king's watchers, and picture, 4935
rich man's diamond, and picture, 4934

Talramud, Count of, 5093
Tamarisk, picture, 5187
Tamar River, mouth, picture, 4436
Tamerlane: see *Timur*
Taming of the Shrew, story of play, 635
Tanager, scarlet, 3493
Tanagra figures, 5128
Tancred, in the First Crusade, 1587
Tanganyika, Lake, 284, 4202
Tangier, Moroccan port, with picture, 4255
Tannagrams, little black, 5525
Tannin, in tea, 3316
Tanning, process among the Israelites, 6167
the process described, 904
Tansy, has tubular corolla, 4112
Taoism, what it teaches, 2998
Tapayaxin, horned lizard, 1220
Tara Hill, abandoned, 5462
picture, 5466
Taranaki, province in New Zealand, 1462
Tarantula, spider, 3303; pictures, 3301
Tarentum, battle of, 5262
Tarim River, 3932, 3934
Tarleton, Banastre, pictures, 981, 991
Tarpon, fish, with picture, 206, 208
Tarquin the Proud, king of Rome, 413
Tartar, on teeth, 2100
Tartarin in the Alps, story of the book, and pictures, 4655
Tartarin of Tarascon, story of the book, and pictures, 4536
Tartars, invaded Russia, 3626, 3934
invaded Western Asia, 3878
Tartar women, picture, 3939
Tashkent, town in Russia, 3753
Tasman, Abel Jans, explorer, 1355
Tasmania, how races have been wiped out, 3076
island of Australia, 356, 1362
once joined to Australia, 3006
Tasmanian devil, with picture, 862, 865
Tasmanian wolf, picture, 865
Tasso, Torquato, Italian poet, 1587
Taste, depends largely on habit, 3089
how tastes can be classified, 4629
smell and taste, 4627
Tate, Nahum, wrote hymns, 568, 1997
Tatler, The, newspaper, its history, 4676
Tátra, Hungary, 5720
"Taube," German aeroplane, picture, 6083
Tay Bridge, 20; pictures, 28, 296
Taylor, Anne and Jane: see **Poetry Index**
Taylor, Bayard: see **Poetry Index**
Taylor, Benjamin: see **Poetry Index**
Taylor, Jeffreys: see **Poetry Index**
Taylor, Rowland, died for his faith, 5068
Taylor, Zachary, administration and death, 2009, 3536
in Mexico, with picture, 1832
picture, 3532
Tea, best way to make it, 3316
effect on the body, 3113, 3315
how it is prepared in China, 5974
preparation for use, and pictures, 88
taken to England from China, 5973
taxes on, 982
tea-gardens in India and China, pictures, 5978
tea-picking, 5974; pictures, 5977, 5979
tea-plant, picture, 3315
tea-taster, 5974
what happens at the manufactory, 5974
where grown in the U. S., 5974
where it is grown, 5973
why sugar absorbs it, 160
Tea-cloth, dainty afternoon, 5449
how to make, and pictures, 2351
Tea-party, how to prepare for, 3284
Tears, their use, 424, 2453
where they come from, 4218
why people cry when hurt, 424
why they are salt, 780
See also **Crying**
Teasel, catching insects, pictures, 3541
Teck, Prince Alexander, picture, 1327
Tecumseh, attack on Detroit, 746
killed, 746, 1821
Teeth, formation and growth, 1962, 1988, 2097
how the teeth grow, picture, 2097, 2099
how they differ in animals, 3046

- Teeth**, why our teeth chatter, 4439
Teheran, town, pictures, 3877
Tehuantepec, an isthmus, 4381
 natives, picture, 4387
Telegrams, a game, 2573
Telegraph, Central Telegraph Office, picture, 3523
 first real telegraph, picture, 4312
 how a telegram is conveyed, 1421
 how a wireless telegram is sent, and pictures, 3526
 how it was carried across the seas, 2474
 how we send a telegram, and pictures, 3519
 invented, 2663, 3535
 telegraphs to the stars, picture, 1943
 telegraphy started, 1099
 the makers of telegraphs, 4313
 why telegraph lines hum, 1863
 why wires go up and down, 3091
Telegraphing thought, and pictures, 233
Tel-el-Amarna tablets, 4976, 4984
Tel-el-Kebir, battle of, 4253
Telemachus, monk, 627
Telemachus, son of Ulysses, 68
Telephone, an easy way to make a telephone, and pictures, 231
 how it works, 4180
 telephone receiver, picture, 4313
 that a boy can make, 5528
 the makers of telephones, 4313
 the wonder of the telephone, and pictures, 349
Telescope, Galileo's invention, 1660, 1943
 how to make, and picture, 3725
 its use, 147, 1949
 Lick observatory telescope, picture, 1947
Telford, Thomas, built Gota Canal, 3600
Tell, Wm., and his son, pictures, 1675, 2951
 Swiss patriot, 120, 1674, 2966
Temperature, discovery through pulse, 3972
 heat and temperature, 4473
 how it is regulated, 1912
 the two scales of temperature, 3671
 what it is, 4370
Tempest, The, Shakespeare's play, 315
Temple of Heaven, Pekin, picture, 2997
Temple of Solomon, its building, 5124
Tench, a fish, with picture, 2679, 2681
Tendon, part of a muscle, 2625
Tennessee, admitted, 3533
 its climate and soil, 5986
 secedes, 2012, 3536
 settlement and admission, 1822
 slave state, 2010
Tenniel, Sir John, Bismarck cartoon, 2756
Tennyson, Alfred, Lord, his life, 3910
 pictures, 3907, 3911
 poems: see Poetry Index
 portrait bust of, 4848
Tennyson-Turner, C.: see Poetry Index
Tenochtitlan, capital of Mexico, 4382
 See Mexico, City of
Tensile strength, what it is, 3695
Ten-week stocks, 5270; picture, 5276
Tepees, homes of Blackfeet Indians, picture, 2559
Teredo, a worm, with picture, 2589
 damages timber, 2587
Terhune, Mrs. Mary V. H., life, 2046
Termite, ant, with pictures, 2949, 2950
Tern, bird, with pictures, 1629, 1630, 1780
Terra-cottas, the Tanagra figures, 5128
Terra Nova, the, used by Capt. R. F. Scott, picture, 5053
Terror, Mount, discovered by Ross, 4730
Tertiary colours, what they are, 2654
Tessellated pavements, 3256
Tetrabelodon's skull, picture, 3679
Te-umman, king of Elam, 4980
Teutons, invaded Europe, 2521, 2851, 2962, 3592
Tewin Churchyard, 1673
Tewksbury, battle of, 2533
Texan War, 4389
Texas, admitted, 1830, 3535
 as republic, 1828
 its industries, 5986
 largest state in the Union, 5985
 local holidays in, 4470
 once a part of Mexico, 5986
 secedes, 2010, 3536
Texas, treaty annexing, 3535
 union with United States, 4288
Thackeray, W. M., his life, 2311
 pictures, 2307, 2311, 2312, 6216
 poems: see Poetry Index
 His Books
 Henry Esmond, 3265
 Pendennis, 3473
 The Newcomes, 3603
 The Virginians, 3363
Thales, discovery about amber, 2113
 drew maps of the stars, 1655
 ideas of motion, 3469
Thames River, its traffic, 2076
 pictures, 36, 2076
 size in olden times, 192
Thames Tunnel, built by the Brunels, 616
Thanet, Isle of, 198
Thanksgiving Day, why celebrated, 4467
Thanksgiving proclamations, 4467
Thaxter, Celia: see Poetry Index
Thebes, capital of Boeotia, 5124, 5130
 defied Sparta, 1304
 its statues, 4160; picture, 4163
Thebes, in Egypt, its quarter for tanners, 6167
Theches, Mount, 5077
Theebaw, king of Burmah, 1380
Theed, W., Albert Memorial work, 5004
Theine, same as caffeine, 3316
Thess, river, 5718
Themistocles, 1302, 5129; portrait, 5121
Theodora, wife of Justinian, picture, 3153
Theodosius, Emperor, 3982
Theology: see Christianity and Religion
Theophilus, Emperor, picture, 3153
Thermo-dynamics, what it deals with, 4366
Thermometer, a measurer of heat level, 4370, 4473
 how made, 4371; with pictures, 4370, 4371
 invented by Fahrenheit, 3864
 use of mercury, 1294
Thermopylae, battle, 1301, 5062
Thermos flask, what is a, 5573
Thesus, Greek statue, 4160
Thespians, drove back the Persians, 1302
Thessaly, 3149, 3220
Thian Shan Mountains, 3931
Thief, catching a thief, story, 2143
 how the thief was found out, story, 4933
 thief and dog, fable, and picture, 3852
Thigh-bone, strongest in the body, 2546
Thimondier, Barthemy, improved sewing-machine, 1621
Things, are there any two things exactly alike in the world? 5382
 right way to do simple, 5523
 twenty-five ways of saying the same thing, 5457
Things to do with a piece of string, 5899
Things to do on Hallowe'en, 5900
Thinkers: see Thought
Third Estate of France, 2268
Thirteen, number, superstition, 1271
Thirteenth Amendment, forbidding slavery, becomes a part of the Constitution, 2022
Thirty Years' War, 2966
Thistle, garden varieties, 5271
 how it was taken to Australia, 3827
 pattern of thistle leaves, picture, 3975
 Scottish emblem, 3082
 thistle-down, picture, 2321
 See also Plume-thistle
Thistlebird, or goldfinch, 3491
Thomas, apostle, 2330
Thomas, General, at Quebec, 743
Thomas, George Henry, at Chickamauga, 2018
 nearly destroyed General Hood's army, 2020
 picture, 2017
Thomas, St., converted Finland, 3630
Thomas the Rhymer, how he charmed the goblin, with picture, 2377
Thompson, David, discoveries of, 5147
Thompson, General, repulsed in Canada, 743
Thompson, Poulett (Lord Sydenham), as governor, death, 1240
Thompson, Sir John, Premier, death, 1248
Thompson-Seton, Ernest, organiser of the Boy Scouts, with picture, 3583
Thomson, James, poems: see Poetry Index
 portrait, 3737
 supposed to have written Rule, Britannia, 3738

- Thomson, Sir J.**, his inventive mind, 4943
on gravitation, 3548
- Thor**, god of thunder, 428
the name Thursday derived from his, 86
trying to drain the horn, picture, 86
- Thoreau, Henry**, his life, 1484
pictures, 1475, 1485
Walden: an extract, 6301
- Thorn**, how to remove from fingers, 3397
the enchanted thorn, story, 1677
- Thorn-apple**, description, 4495
fruit, 4491
- Thorn-back crab**, 2584
- Thorn-back skate**, picture, 2449
- Thornycroft, Hamo**, a sculptor, 4162
his Cromwell statue, 4163
- Thoroughwort**: see **Boneset**
- Thorpe, Rose H.**: see **Poetry Index**
- Thorwaldsen, Bertel**, a sculptor, 1804, 4162
- Thothes III.**, king of Egypt, 4786, 5003
- Thought**, are thinkers the best speakers, 5852
effect of feeling, 5028
famous thinkers, 4097, 4617
figures expressing thought, pictures, 5025
how thoughts can be read, 5251
how to think, 5025
learning to think, 5019
mystery of telegraphing, 238
not the quickest thing in the world, 4116
we are always thinking, 5020
we think chiefly in words, 1367
what a thought is, 1366
what happens when we think, 4939
what makes us think, 1365
where thoughts come from, 1365
where thoughts go when we sleep, 1365
- Thought-reading**, by cards, and picture, 2259
- Thousand**, its meaning, 1932
- Thousand Islands**, description of the, 5425, 6183
- Thrace**, province, 3224, 5130
- Thrasher**, brown, 3495
- Three bears**, **The**, story, and picture, 1187
- Three Fates**, **The**, a Greek statue, 4160
- Three Rivers**, attack at, 743
- Thresher shark**, 2444; picture, 2445
- Threshing-machine**, invented, 2668
picture, 4087
- Thrift**: see **Sea-pink**
- Throat**, a lump in the throat, 4602
- Throgmorton, Elizabeth**, wife of Sir Walter Raleigh, 5395
- Throwing light**, game, 2573
- Throwing the baseball**, game, 1000
- Thrush**, 2058, 2328; pictures, 51, 2055
nests of, 5778
varieties in Canada, 3496
- Thrym**, how he was deceived by Thor, 87
- Thumb**, how it is formed, 2545
- Thumbeline**, **Little Tiny**, story, and pictures, 3499, 3500
- Thun**, city of, 5670
- Thun, Lake**, in Switzerland, 2960
- Thunder**, cause of sound, 1575, 4583
why it follows lightning, 777
why we feel hot before thunder, 1641
- Thunderstorm**, what to do in, 6250
- Thunderbolts**, 3093
- Thunderer fish**, gives electric shocks, 2451
- Thursday**, how it got its name, 86, 428
- Thyme**, how to grow thyme, 3176
picture, 4611; wild, 4616
- Tiber**, a famous river of Italy, 3012
- Tiberias**, Christians defeated at, 1589
- Tiberius Cesar**, and picture, 523
- Tibet**, its history, 3936
map, 3933
pictures, 3931, 3937, 3939, 3940
where it is, 3932
- Ticino River**, its course, 2960
- Tickling**, and laughter, 4443
- Ticks**, insects, 3304; pictures, 3297
- Ticonderoga**, battle of, 885
- Tides**, effect on earth's movement, 37
in olden days, 34, 311
in the earth's crust, 3008
made by sun and moon, 33
the sun has tides, 37
the wonder of time and tide, 2279
what they leave behind, picture, 1413
where the water goes at low tide, 3382
why there are two tides a day, 3978
- Tientsin**, port of Peking, 114
- Tierra del Fuego**, its discovery, 4499
its natives, 3676
why so called, 4500; picture, 4499
- Tiflis**, capital of Georgia, 3631, 3752
- Tiger**, and the traveller, a story, 5421
how it kills its prey, 5723, 5724
how to make a stuffed tiger, 716; with pictures, 714, 715
in India, 5723
its jaws and teeth, 2097
stories about, 5316, 5724, 6075
the Brahmin and the Jackal, the, 3164
tiger with teeth like swords, picture, 44
tigers, pictures, 133, 153
unspoken language of, 5324
what its tongue is like, 2207
what kind of animal it is, 135
why it can see in the dark, 153
- Tiger beetle**, with picture, 3261, 3264
- Tiger Lily**, 5271; picture, 5279
- Tiger moth**, picture, 3894
- Tiger that came in the night**, 6075
- Tiger woman**, of the jungle, story, 5316
- Tiglath Pileser I.**, king of Assyria, 4977
- Tiglath Pileser III.**, his reign, 4978
- Tigris**, river in Mesopotamia, 3873, 4971
- Tilden, Samuel J.**, defeated candidate, 3537
dispute regarding his election to presidency, 2417
- Tillus**, the Athenian, 1301
- Tilly, General**, 2523
- Tilist, peace of**, 2276
- Tilton, Theodore**: see **Poetry Index**
- Timber**: see **Wood**
- Timber hitch**, and picture, 3283
- Timbuktu**, centre of caravan traffic, 4254
- Time**, how it is reckoned, 677
how men first told the time, picture, 1538
how men measured time by the sun, picture, 1539
how to measure time, 3669
how to tell time by the clock, 1542
the wonder of time and tide, 2279
what Greenwich time is, 3036
- Times**, **The**, newspaper, 3574
- Timid Hare**, **The**, 4522
- Timocharis**, studied the heavens, 1656
- Timon**, censured Euclid, 4618
- Timur**, last of the great Mongol rulers, 112
led the Tartars, 3878
ruled his empire from Samarkand, 3935
- Tin**, its specific gravity, 3816
- Tinder**, used for kindling fire, 653, 775
- Tinder-box**, **The**, story, and pictures, 4126, 4127
- Tin soldier**, the steadfast, story, 2305
- Tintoretto**, artist, his life, 1260
- Tip-cat**, game, 724
- "Tippecanoe and Tyler Too!"** origin of political cry, 3535
- Tippler pigeon**, 2216
- Tiredness**, how it affects digestion, 3110
of metals, 5486
why we get tired, 423, 1861
- Tires**, invention of pneumatic, 5678
- Tissaphernes**, Persian general, 5076
- Tisty-tosty**: see **Guelder Rose**
- Tisza River**, waters Hungary, 2860
- Titian**, employed by Philip II., 5499
his life, 757
his work as a painter, 4587
how he treated Tintoretto, 1260
pictures, 759, 1259
pictures by, 761, 4590
studied under Bellini, 1256
- Titicaca Indians**, picture, 4503
- Titicaca, Lake**, height above sea-level, 4572
in the Andes, 4498
iron will not rust in its waters, 4572
picture, 4497
- Titmice**, birds, 2216; pictures, 2217
- Tit, tat, toe**, game, 2572
- Titus, Arch of**, monument, 5005, 5268
picture, 5012
- Titus Aurelius Antoninus**, emperor of Rome: see **Antoninus Pius**
- Titus Flavius Sabinus Vespasianus**, built the Coliseum, 5268
his reign, 531, 5005
picture, 532
- Tityus**, tortured, picture, 4956

INDEX

- Toad, life-story**, 1223, 1224, 2327
 pictures, 51, 1228 in colour
- Toad's Mouth**, rock, picture, 1059
- Toadstools**: see Mushrooms
- Tobacco**, effect on the body, 3318
 first grown and smoked in England, 5394
 laws against children smoking, 3320
 plant, picture, 3315
 production of in U. S., 2422, 2665
- Toboggan**, how to make, and picture, 2349
 in Canada, 5210
 slide in Montreal, picture, 1753
 tobogganing, picture, 2513
- Toe**, how the great toe should move, 2546
 not necessary for walking, 2454
 why we have toe-nails, 1986
- Toffee**, how to make, 2139
- Togo, Admiral**, 363
- Toilers of the Sea, The**, story of the book,
 and picture, 4171
- Toilet cover**, how to make huckaback toilet
 cover, with pictures, 4773
- Toilet tidy**, with pictures, 2872, 4353
- Tokio**, capital of Japan, 370
- Tolbooth prison**, Edinburgh, picture, 2803
- Toledo**, town in Spain, 3352, 3361
- Tolstoy, Count Leo**, 3754
- Toltecs**, American tribe, 4384
- Tom Brown's Schooldays**, story of the book,
 4063
- Tom Thumb**, story, and picture, 706
- Tom Tiddler's ground**, game, 724
- Tomatoes**, how to grow, 3398, 3514, 3922
- Tombs**, discovered in Egypt, 4780, 4786, 5100, 5823;
 pictures, 5824
 of the Caliphs, picture, 5813
 paintings on tombs, pictures, 4792, 5099
- Tommy Toe-biter**, tadpole, 1224
- Tomsk**, near the Siberian railway, 3752
- Tomtits**, colony of, 5777
 its habits, 2216
 nests of, 5783
 pictures, 51, 1741, 1744, 2217
- Tonga**, young lady, picture, 1463
- Tongue**, connection with taste, 2207, 4628
 its work, 2207
- Toothwort**, description, 2841, 4418
 picture, 4416
- Top**, its spinning power, 684
 tops, showing equilibrium, picture, 3669
- Topiary, Augustus Montague**, portrait, 1999
 wrote Rock of Ages, 2000
 showing the taste buds, picture, 4629
- Tonty**, companion of La Salle, 264
- Tool-box**, how to make, and picture, 339
- Tools**, how to clean tools, 4456
 that a boy carpenter wants, 337
 See also Names of Tools
- Tooth-powder**, best kind to use, 2100
- Topsy-turvy railway**, 2230
- Torrey**, the brave diver of, story, 3254
- Torch**, how men made, long ago, 653
- Torch Lily**: see Red-hot poker
- Tories**, during American Revolution, 984, 1388
- Toronto**, captured, 1399
 derivation of name, 6184
 former capital of Canada, 214, 1242
 scenes in, pictures, 1754, 1755, 6187
 second city in the Dominion, 6184
 See also York
- Torpedo**, name for electric ray, 2448
- Torpedoes**, fired by submarines, 5591
- Torquemada**, noticed that Mexican Indians
 used rubber, 5677
- Torrens, Lake**, discovered by Eyre, 357
- Torres**, explored Australia, 1355
- Torres Straits**, north of New Guinea, 1466
- Torres Vedras**, lines of defence, 3360
- Torricelli, Evangelista**, discovered secret of
 atmosphere, 3942; pictures, 3943
- Tortoise**, does not eat black-beetle, 5524
 hare and the tortoise, fable, 462
 how the lammergeier treats it, 1843
 length of life, 2327, 2328
 pictures, 51, 507
 sleeps all winter, 506
 tortoise and the eagle, fable, 3062
 tortoises as pets, 5114
- Tortoiseshell butterfly**, with picture, 2935
- Tory**, name for the Conservatives, 2386
- Tostig**, set fire to old Scarborough, 1320
- Toucan**, bird, 1746; picture, 1743
- Touch**, can a blind man's touch take the place
 of his sight? 5486
 the sense of touch, 1964, 3720
- Touch**, game, 574
- Touch-me-not**, picture, 4838
- Toulon**, siege of, 4355
- Toulouse**, town in France, 2398
- Tours**, battle of, 2064
 called the Garden of France, 2399
- Touzel, Edward**, saved St. Helier, 1053
- Tower**, how to make with reels, 4352
- Tower Bridge**, London, how it opens, 20
 picture, 27
- Tower of Babel**: see Babel, tower of
- Tower of London**, imprisonment of little
 princes, 1980
 picture, 1159
 the men who built the Tower, 1158
- Town**, how the children saved the town, story,
 964
- Towton**, battle of, 2918
- Toys**, how to mend, 4249
- Trachea**, the windpipe, 2051
- Trade winds**, what they are, 4182, 5954
- Tradition**, what it means, 2802
- Trafalgar**, battle of, 1095, 2276, 3360, 4362
 picture, 1092
- Trafalgar Square**, Nelson Column, with pic-
 ture, 5004, 5011
 picture, 1165
 story of its making, 1166
- Tragedy**, what it is, 473
- Tragopan**, pheasant, 1515; picture, 1516
- Train**: see Railway train
- Trajan**, Roman emperor, 531, 5005, 5268
 picture, 532
- Trajan's Column**, in Rome, 5005, 5268; picture,
 5009
- Tramcar**, drawn by mules, in London, 272
- Trans-Caspian railway**, 3753, 3932
- Transfer patterns**, how to use, 1507, 2133, 3375
- Translation**, its meaning, 3469
- Translucent**, its meaning, 1266, 2622
- Transparent**, its meaning, 1266
 what makes things transparent, 2622
- Trans-Siberian railway**: see Siberian railway
- Transvaal**, 1768, 1770
- Trap-ball**, game, 1614
- Trapdoor-spider**, 3302; pictures, 3299
- Trapper**, hunts animals for fur, 2728
- Traps and Trapping**, in Canada, 4818; with
 pictures, 5147
- Trasimenus, Lake**, battle, 5264
- Traveller and the wolves**, game, 724
- Travellers**, and bear, fable, and picture, 4274
 guided by the stars, 1942
- Traveller's dinner**, problem, and picture, 4146,
 4250
- Travelling long ago**, 6105
 pictures, 6104, 6108, 6109, 6111
- Traverse**, Indian means of transportation,
 picture, 2559
- Trawling**, how it is done, 3765
 pictures, 3770
- Treasure of the Poor**, story, and picture, 2742
- Tree kangaroo**, lives in trees, 862
- Tree leopards**, picture, 51
- Tree peony**, 5271
- Tree-pipit's egg**, picture in colour, 1744
- Trees**, all trees flower, 2077
 are they grown from seeds, 5849
 American, in summer, with pictures, 5621
 American, in winter, with pictures, 5437
 American, with pictures, 4487
 "Cathedral" group in Stanley Park, picture,
 5429
 covered with frost, pictures, 4893, 4897
 cross-section of California redwood, 4902
 curious way of measuring a tree, 5666
 flowers die in winter, 5166
 harmed when leaves are plucked, 3093
 height of a tree shown by its shadow, pic-
 ture, 1927
 how the leaves drink in sunlight, picture, 287
 how they resist gravitation, 3861
 how to measure, 1927, 5295
 how to tell a tree's age, 917
 India-rubber, picture, 5683
 measuring height, picture, 5295
 need for trees, 3077

INDEX

- Trees, of Canada, 3783**
 pictures, 3177, 3439
 talks about trees, 3177, 3439, 3649
 trees in the park, puzzle, and picture, 4146, 4250
 turn into coal, 49, 799, 3073, 3542
 why part grows up and part down, 1572
 why some get blown down, 919
 why the branches grow sideways, 3860
 why the roots grow in the ground, 3860
 why they stop growing, 3979
 why trees grow straight, 3860
- See also Forests; Maple**
- Trefoil, bird's foot, 4288; with picture, 4287**
 hare's foot, 4288; with picture, 4286
- Trench, Dr. R. C.: see Poetry Index**
- Trench, for boy scouts, how to make, 4032**
- Trent, the, British ship from which Messrs. Mason and Slidell were taken, 2014**
- Trenton, battle of, 986**
- Tresham, Sir Thomas, took part in Gunpowder Plot, 1792**
- Trèves, oldest town in Germany, 2754**
- Trevethick, Richard, his engine, picture, 613**
 made a steam-engine, 610
- Tribal life in early England, described, 5993**
- Tribunes, Roman magistrates, 5261**
- Tribuno, Pietro, started building of Campanile of St. Mark's, 1252**
- Tribute Money, Masaccio's picture, 4588**
- Tricks, blowing a tumbler from another, 98**
 dancing dwarf illusion, 5667
 difficult drawing trick, 6068
 disappearing penny, 2355
 hints and tricks for odd moments, 5900
 how to disguise the voice, 6068
 how to make a windmill, 98
 leg trick, 6068
 little fountain in a jar, 6068
 making a chain from paper, 98
 making electricity with a lemon, 98
 mysterious paper purse, 2566
 mystery of the suspended knife, 5658
 pillars of Solomon, 2870
 robbers and the soldiers, 2766
 simple tricks for odd moments, 5112
 supporting a plate on a pin, 98
 telling numbers by cards, 5660
 the magic tumbler, 2132
 to form a square, 5666
 tricks with dominoes, 4139
 tying two people together, 4462
 with coins, 98
 wizard's pocket-handkerchief, 2488
- Trieste, port of Austria, 2860**
- Trigger-fish, picture in colour, face 200**
- Trillium, varieties of, 2837, 2838**
- Trinidad, its pitch lake, 1878**
- Trinity Cape, or Rock, picture, 6189**
- Trinity Church, its quietness, 4306**
- Tripoli, belongs to Turkey, 4261**
 trouble with, 3533
 war with, 2900
- Tristan d'Acunha, island, 3324**
- Tristram, Sir, his life, and picture, 3211**
- Trojan War, story, and pictures, 67**
- Trollope, Anthony, 2315; portrait, 2307**
- Tromp; see Van Tromp**
- Tromsø, town in Norway, 3602**
- Tropic bird, a sea-bird, 1630**
- Trott, the sad heart of Little Trott, story, and picture, 3209**
- Trout, fish, 2680; picture, 2679**
- Troy, ruins discovered, 5122**
 siege of, 5280
 story of Helen of Troy, and pictures, 67, 1683
 wooden horse of Troy, picture, 71
- Truck, how to make with reels, 4352**
- Truffles, hunting for, 4752**
- Trumbull, John, life and art, 4148**
 pictures painted by, 987, 4153
- Trumpet, effect on sound, 4584, 5021**
- Trumpeter, a bird, 1958**
- Trumpeter pigeon, 2216**
- Truro, Can., manufacturing centre, 5601**
- Truth, how truth got to the bottom of a well, story, and picture, 3162**
 importance of interest in truth, 5023
 the magic pen of truth, story, 2092
- Truxton, Thomas, in command of the Constellation, 2900**
- Tryon, William, defeated Regulators, 982**
- Tsar, the girl who saw the tsar, story, 2368**
 title adopted by Russian kings, 3626
- Tschaikowsky, Peter, composer, 3252**
- Tsetse-fly, 3144**
 pictures, face 3140, 3147
- Tuatera, its third eye, 5570**
- Tube railways: see Railways**
- Tuberculosis: see Consumption**
- Tube-worms, picture, 1417**
- Tudor kings, 841, 2706**
- Tudor rose, picture, 3428**
- Tuesday, how it got its name, 85**
- Tufted hair grass, picture, 2982**
- Tufted auk, bird, 1632**
- Tufted-tail porcupine, 669; picture, 671**
- Tug-of-war, game, 724**
- Tuileries Palace, French royal family imprisoned, 2270**
 stormed, 1804, 2272
- Tukulti-Adar I., king of Assyria, 4977**
- Tula, town in Russia, 3750**
- Tulip, picture in colour, 3727**
- Tulips, the fairy tulips, legend, 3208**
- Tumbler, how to blow one tumbler out from another, and picture, 98**
- See also Glasses**
- Tumbler pigeon, 2216; picture, 2213**
- Tumbling tablet, how to make, and picture, 4034**
- Tunbridge Wells, the wooden homes of Tunbridge Wells, tale, 1109**
- Tundras, plains in Russia, 3745**
- Tunghwan, Desert, remains of wall, 110**
- Tungusians, people, picture, 3751**
- Tunicates, low animal forms, 3677**
- Tuning-fork, experiment to show difference between high and low notes, 4760**
 its sound when touching wood, 4597
 sameness of its sound, 4864
 sound over jug of water, 4915
- Tunis, flag, picture in colour, face 1640**
 picture, 6032
 under French protection, 4261
- Tun-li, in story of Search for a Happy Man, 5689**
- Tunny, enemy of flying-fish, 207**
- Tupper, Sir Charles, as premier, 1248**
- Turbit, pigeon, 2216**
- Turbot, fish, 206; picture, 205**
- Turcomans, 1550, 3932; picture, 3939**
- Turkestan, map, 3993**
 province, 105
- Turkey, bird, 1520; picture, 1519**
- Turkey, Asiatic Turkey: see Turkey in Asia**
 country, rise and decline, 3149
 flag, picture in colour, face 1640
 its flag, 3154
 its government, 3226
 its railways and industries, 3224
 peasant's gala costume, picture, 3225
 signed treaty of Berlin, 3222
 sultan at first meeting of Parliament, picture, 3219
- Turkey and the Balkans, 3219**
- Turkish emblem, picture, 3219**
- war with Russia, 3222, 3631**
 with Balkan States, map, 3148
- See also Turks**
- Turkey in Asia, 3873, 3882**
- Turkish delight, how to make it, 3512**
- Turks, attacked Hungary, 2854**
 besieged Vienna, 2528, 3158
 conquered Albania, 122
 conquered the Byzantine Empire, 3154
 fought with the Persians, 3158
 gained Asia Minor, 3154, 3878
 how they gained power in Egypt, 4256
 invaded Europe, 3833
 invaded south-western Asia, 3878
 lost their power in Roumania, 3220
 obtained power in North Africa, 4261
 reigned at Delhi, 1700
 rule in Greece, 1640, 3219
 ruled the land on the north shore of the Black Sea, 3626
 their rise to power, 3880
 treated the Christians cruelly, 1586
- See also Turkey and Young Turks**

INDEX

- Turner, C. Y.**, an artist, 4152
Turner, Elizabeth: see Poetry Index
Turner, J. M. W., painter, 764, 4587
 picture, *The Fighting Téméraire*, 4594
 pictures of Venice, 757, 3017
 portrait, 759
Turner, Joseph, author of *Roll On*, Silver Moon, 2953
Turnpikes, game, 4027
Turnus, king of the Rutuli, 72
Turpentine, an oil, 38
Turtlehead, description of flower, 5036
 picture, 5034
Turtles, 48, 207
Tuscany, passed under the power of Austria, 3018
 region of Italy, 3012
Tuskegee, school for negroes, 2914
Twachtman, John W., art of, 4152
Twain, Mark, his life, 1487
Tway-blade, description, 4423
 picture, 4421
Tweedledum and Tweedledee, picture in colour, face 5380
Twelfth Night, the story of the play, 476
Twelve-wired bird of paradise, 1738
 picture, 1742
Twenty Thousand Leagues Under the Sea, story of the book, and picture, 4985
Twin-flower, description, 3050
Twisted-stalk, description, 2841
Two Gentlemen of Verona, The, story of the play, 631
Two (the) Natures in Man, statue, 4848; pictured, 4849
Twopeny, William, life and work of, with pictures, 5619
Two spotted chellinus, picture in colour, face 200
Tying two people together, trick, and picture, 4462
Tyler, John, administration, 3535
 as president, 1830
 picture, 3532
Tyler, Wat, leader of a rebellion, 752
Tympanum, what it is, 3869
Tyndall, J., found why sky is blue, 426
 his life, 857; with portrait, 851
 invented a vowel flame, 4918
Tyndale, William, translator, 6024
Type metal, what it is made of, 1870
Type-setting machine, invented, 2670
Tyr, Norse god, and picture, 85
Tyre, city, 1589, 5124
Tyrol, description of country, 2858, 6260
 "German road" through, 6260
 how the people live, 6261
 love of natives for it, 6257
 rose against the French, 122, 6257
 united with Austria, 2854
Tyrolese, where they live, 320
 working in the fields, picture, 2859
Tze-hsi, empress of China, picture, in colour, face 105
- U
- Ufa**, famous for iron mines, 3752
Ufzi Gallery, Florence, picture, 2784
Uganda, in Africa, 4260; picture, 4259
 railway built, 5728
Ugly Duckling, story, and picture, 1678
Uitlander, what it means, 1770
Ullswater, the maid of, tale, 1108
Ulna, bone of the forearm, 2627
Ulnar nerve, the funny-bone, 2627
Ultra-violet, colour notes, 3236
Ulysses, dog that remembered him, story, 4221
 had the wooden horse built, 70
 his strange adventures, 68
 how he went to the wars, 969
Umbrella, how to mend, 4249
 to dry an, 5523
Umbrella ant, is the *Sauba ant*, 2944
Umbrella bird, with picture, 1736, 1747
- Umbrians**, settled in Italy, 5259
Una, and the Red Cross Knight, 687
Uncle Remus, tales of: see *Brer Rabbit*
Uncle Tom's Cabin, a book about slavery, 1484
Undine, in story of a water nymph, 5518
Undine and Bertha, story, with picture, 4005, 4006
Ungava, as district, 1247
 description of, 1915
Unhappy king of Persia, story, 816
Unicorn, belief in, 5926
Unicorn-fish, has a remarkable spine, 2451
Union Act, of Canada, 746, 1240
Union Jack, pictures in colour, face 1640
 story of, 1096, 1640, 2833
Unions, trade or labour, 4091
United States of America, American heroes of science, 3200
 American sculptors, 4841
 boy (the) scouts of America, 3583
 brave (a) little Quakeress, 4531
 census and growth, 2420
 child life in Colonial days, 941
 civil war, 4390
 cotton produced, 4808
 Cuba and the Philippines annexed, 3360
 education in, 2666
 Elizabeth Patterson's marriage, 4907
 Erie Canal, 3534
 fairyland (the) of Arizona, 3589
 famous American painters, 4147
 famous American writers, 1475
 first college founded by Puritans, 518
 first legislature meets at Jamestown, Va., 516
 first railroads in, 616, 3534
 flag, 1095, 1640; with picture in colour, face 1640
 glimpses of the Southern States, 5983
 Helen Keller, 5285
 heroes of peace, 3105
 how Peary found the Pole, 5211
 how we get kerosene, 4131
 Indian legends, 1063
 Indians of the Painted Desert, 3683
 inhabitants, 2665
 Knickerbocker days in New York, 5533
 Mammoth Cave, 583
 manufactures, 1662
 Mississippi, the, 6113
 Natural History (the) Museum of New York 4901
 new (a) song of a shirt, 1620
 new (the) woman, 3063
 Pocahontas, 4533
 population increases, 1095, 1644
 railroads, first, 3534, 3537
 raw and manufactured products, 2558, 2661-2662
 some American inventors, 2667
 some little girls of long ago, 2711
 telegraph, 3535
 Thomas Alva Edison, 4447
 trial (the) of the spy, 4281
 upper New York, 5179
 visit (a) to New York, 4305
 war with Mexico, 4388
 Washington, our capital city, 1708
 what New York City does for its children, 3193
 women writers of the United States, 2043
 wonder worker in plants, 3482
 writers of famous American songs, 2953
 Yellowstone Park, 587
United States, History, Alaska, purchase of, 2177, 3536
 becomes independent, 4037
 brothers' (the) war, 2007
 building homes in the new land, 513
 building the new nation, 1387
 California, compromise concerning, 3536
 Canal Zone, 2190
 Civil War, causes, conditions, and results, 1598, 1828, 2007, 2012, 3536
 Compromise of 1850, 2008
 Confederate States Government organised, 2010
 Cuba, 2184, 3538
 Custer massacre, 3537
 days we celebrate, 4463
 Dred Scott decision, 2009
 early naval heroes, 2897
 explorers and what they found, 257
 famous ladies of the White House, 387

INDEX

United States, History, five famous presidents
of the United States, 787
Florida, purchased, 3534
foreign possessions of the United States, 2177
France, war with, 2898, 3533
Fugitive Slave Law, 2008, 3536
Gadsden Purchase, 3536
growing (the) West, 1819
Guam, taking of, 2190
Hawaii, annexation of, 2181, 3538
how the United States is governed, 1593
Indian wars, in the West, 3537
Japan, Treaty with, 3536
John Brown's raid, 2010, 3536
Kansas, as a battlefield, 3536
Lafayette, visit of, 3534
land (the) before the white men came, 9
lost colony (the) of Roanoke, 6131
Louisiana Purchase, 3534, 3538
Maine, sinking of, 2188, 3538
Mexican War, 1830, 3535
Midway Island, 2190
Missouri Compromise, 1825, 1826, 2008, 2009
Monroe Doctrine, 3534, 3538
Mormonism, 1827, 1832
naval heroes, 2897
navy, 2898, 3537
northern possession, 4041
Oregon question, 3535
Pago Pago, harbour of, 2190
Panama canal, 2190, 3538, 5631
Perry's victory on Lake Erie, 4279
Philippines, 2184, 3538
Porto Rico, 2188, 3538
presidents' (the) administrations, 3533
reciprocity treaty with Canada, 1242
Samoa agreement, 2190
slavery in, 516, 1826
Spanish war, 2184, 2188, 3538
struggle (the) for the continent, 879
Texas, treaty annexing, 3535
Tripoli, war with, 2900, 3535
Two spies of the Revolution, 3811
United States Bank, 3535
United States (the) today, 2417, 2657
Venezuela boundary dispute, 3538
War of 1812, 1398, 2901, 3534
World's Fairs, 3537, 3538

See also America; Battles; Canada; Civil War; Colonies; Explorations; Mexico; Political Parties; Revolution; Wars; names of individual countries, states, etc.

United States, the, a frigate, and the Macedonian, 1398, 2902
built, 2900
figurehead of, 4841
United States Bank, destroying of, 3535
Universities, Harvard, in Boston, 518
in Canada, 5234
Laval, in Quebec, 5234
McGill, in Montreal, 5234, 6184; pictures, 2247, 6185
of Toronto, 5234
Queen's in Kingston, Ont., 5234; picture, 5237

See also Colleges

Unknown Hero, 6069
"Unright," nickname of a German treaty, 2528
Unstable equilibrium, what it means, 3673
Unter den Linden, picture, 2747
street in Berlin, 2579
Unterwalden, Swiss canton, 2964
Upernivik, town, picture, 52
Upper Canada, as a province, 745, 1239
Upsala, university town, 3600
Up to London, game, and picture, 5113
Ur, city of Mesopotamia, 4974
Ural Mountains, 3623, 3752, 3753
Uranium, an element, 1295, 1419, 2619
Uranus, discovered by Sir William Herschel, 1664
planet, its distance from sun, 150
what is known about it, 2429
Urban the Good, converted Valerian, 1014
Urban II., pope, with picture, 1586
Urban VIII., pope, 4956
Urea, was made by a chemist, 4120
Uri, canton of Switzerland, 2964
Uri, Lake of, in Switzerland, 1674
Uric acid, made in our bodies, 1799

Ursa Major: see Great Bear
Ursa Minor: see Little Bear
Ursula, St., legend, with pictures, 1008
Uruguay, cattle industry, with picture, 4569, 4571
flag, picture in colour, face 1640
state of South America, 4502, 4568
Uruguay River, flows into river Plate, 4568
Uspallata Pass, tunnelled through, 4569
Utah, admitted, 3538
settlement, 1834
Utrecht, bishops of, in Netherlands, 3458
peace of, 540, 5148
town in Holland, 3456

V

Vaal River, in South Africa, 1769
Vaccination, 2459, 4200
Vacuum, what it is, 658, 917, 1992, 2230, 3942
Valdai Hills, in Russia, 3623
Valdez, besieged Leyden, 3553
Valencia, province of Spain, 3352, 3353
Valentine, E. V., a sculptor, 4850
Valerian, husband of St. Cecilia, 1014
Valerian, Roman emperor, 5066
Valerius Publius, a Roman noble, 413
Valetta, chief town of Malta, 1875
Valetta, defended Malta, 1875
Valhalla, land of Norse gods, 86, 3417
Valkyries, maidens who attended Woden, 86
Valladolid, has been renamed, 4388
Valley Forge, winter at, with picture, 988
Valleys, 1928, 3227; picture, 408
Valparaiso, town, 4569; picture, 4573
Value, compared with cost, 1570
Valves, in veins, with picture, 1580, 1582
Van Buren, Martin, administration, 3535
as president, 1828
picture, 3532
Vance, Governor, and the Ad-Vance, 2019
Vancouver, George, visits Hawaii, 2181
Vancouver, description of, 5611
scenes in, pictures, 5429, 5430
was founded, 220
Vancouver Island, united with British Columbia, 1247
Vandals, conquered Iberian Peninsula, 3352
wars with Romans, 5268
Van Dyck, Anthony, his portrait of a gentleman, 762
his portrait of Thomas Killigrew, 4591
his portraits of Charles I., 1022, 1887, 1891
painter, 760, 4587
portrait of the painter, 759
Van Dyke, Dr.: see Poetry Index
Van Horne, Sir William, life-work, 4302
Vanilla caramels, how to make them, 3512
Vanishing pillar trick, with picture, 1721
Van, Lake, the fairy maid of, story, 2302, 4130
Van Rensselaer, General, to attack Niagara, 746
Van Tromp, Martin, fought with Blake, 1027, 1892, 3463
Vapour, the same as gas, 3384
Vapourer moth, female never flies, 2993
Vardhamana, what he taught, 2996
Varna, chief port of Bulgaria, 3222
Varnishing wood, with picture, 2256
Vase, from Arabian Sea, story, 556
how a vase is made, picture, 4482
Vatican, its building, 4946, 4950
Raphael's frescoes, 4954; picture, 4951
residence of the popes, 758, 3020

See also Sistine Chapel

Vaudois, were persecuted, 1892
Vaughan, Henry: see Poetry Index
Vecchio Palace, with picture, 2784
Vedder, Elihu, art of, 4151
Vega, pictures, 2611, 2613
star, 2612
sun moves toward, 5791
Vegetable ashes, their value as manure, 4354
Vegetables, contain many salts, 2698
difference between them and fruit, 5958
what to sow in April, 3176
what to sow in March, 2971
when to transplant greens, 3398

INDEX

- Vegetarians**, what they eat, 3216
- Veli**, destroyed by the Romans, 414
- Veins**, carry the blood to the heart, 1579
pictures 1580, 1581, 1636
- Velasquez, D.**, born at Seville, 3361
his picture, A Boy and His Dog, 763
his picture, Maids of Honour, 4593
his work, 760, 4587
portrait, 759
- Vellum**, a kind of parchment, 3399
- Velocity**, what it is, 3672
- Vendôme Column**, in Paris, 5005
- Venetia**, province of Italy, 3012
- Venezuela**, dispute concerning boundary, 3533
flag, picture, in colour, face 1640
republic of South America, 4574
- Veni, vidi, vici**, Cæsar's letter, 5266
- Venice**, a busy port, 3024
besieged Constantinople, 3154
Bridge of Sighs, 1252; picture, 1253
built on wooden piles, 1988
Doge's palace, 1250; pictures, 1249, 1257
Foscari and Pesaro palaces, pictures, 1257
Grand Canal and Rialto, pictures, 1255
her great power, 473
her history, 3016
how she became a city, 1249
Lion of St. Mark Column, 5005; pictures, 1249, 1508
makers of Venice, 1249
possessed Greece, 3153, 3219
Rialto Bridge, 1252; with picture, 1255
St. Mark's: see St. Mark's
seized Byzantine islands and ports, 3150
- Ventilation**, of Jack's house, picture, 6253
why it is necessary, 1788
- Ventricle**, a chamber of the heart, 1532
- Venus**, goddess, brought Galatea to life, 962
got the golden apple from Paris, 1683
how she treated Psyche, 1902
mother of Æneas, 72
- Venus**, a planet, 146
how far it is from the sun, 150
how the planet got its name, 2234
seen as a crescent, 2423
transit of Venus, 1661
was supposed to control love, 1940
what is known about it, 2424
why it is sometimes brighter, 2800
- Venus of Milo**, picture, 4167
statue, 4160
- Venus's fly-trap**, with pictures, 3541, 3734
- Vera Cruz**, battle of, 1832
founded by the Spaniards, 4332
taken by the United States, 4390
- Verb**, in the active voice, 3370
- Verbena**, plant, 1350
- Verchères, Madeleine de**, how she held the fort, with picture, 241
- Vercingetoræx**, condemned by Julius Cæsar, picture, 418
- Verdi, Giuseppe**, musical composer, 3252
- Verdigris**, what it is, 5575
- Verigin, Peter**, leader of the Doukhobors, 6052
- Vermicelli**, preparation of wheat, 2925
- Vermont**, admitted, 1820, 3533
- Vernal grass**, with picture, 1332, 1342
- Verne, Jules**, his story, Round the World in Eighty Days, 4865
his story, Twenty Thousand Leagues Under the Sea, 4985
- Verona**, Lord of, tomb, picture, 5005
- Veronese, Paul Caliari**, great painter, 1262
his picture, The Feast in the House of Simon, 1261
- Veronica**, speedwell, with picture, 2042
- Verrazano**, statue, 265
voyage of, 262, 535
- Verrocchio, Andrea del**, Colleoni monument, 1254, 4161, 4165
- Versailles**, description, with pictures, 5334
- Versailles Palace**, near Paris, 2070, 2267, 2270
- Verse**, different kinds of verse, 343
made with figures and letters, 5661
- Vertebrae**, bones of the spine, 664, 2437, 2440
pictures, 664, 2441
- Vertebrates**, animals with backbones, 664, 2437, 4217
- Vertigo**, dizziness, 2233
- Verulam**, where Alban lived, 482
- Vespasian**, built the Coliseum, 5263
how Henry VII. resembled him, 2706
picture, 531
Roman emperor, ruled well, 531
- Vespucci, Amerigo**, America was named after him, with picture, 59
voyage of, 258
- Vesuvius**, eruption of, 5314, 6139
picture, in colour, face 1062
volcano, 422, 2075
- Vetch**, 4111, 4287
tufted, 4283; with picture, 4287
- Vetching**, grass: see Grass-pea, 4424
- Vibration**, different kinds of vibration, 2620, 4914
experiment with a plate, 4916
what it is, 509, 3469, 4744
what notes are, 4917
- Vice-President (the) of the United States**, what he is, 1595, 1596
- Vice-Presidents**, who succeeded to the office of president, 2418
- Vicksburg**, fortified by the Confederate armies, 5985
surrendered, 2016
- Victor, Claude Ferrin**, marshal, 4362
- Victor Emmanuel**, first king of united Italy, 1640, 1654, 3024
pictures, 125, 3011
- Victoria, Queen**, came to the throne, 1096
her reign, 1706, 2540, 5952; portrait, 2539
- Victoria**, Australia, what it is like, 1353
- Victoria**, capital of British Columbia, 5611
- Victoria**, capital of Hong Kong, with picture, 113, 116
- Victoria Day**, English holiday, 4463
- Victoria Falls**, 4254; pictures, 24, 4747
- Victoria Land**, discovered by Ross, 4730
- Victoria Nyanza, Lake**, 4254, 4260
- Victoria Regia**, lily, 4500
- Victory, Column of**, 2747
- Victory of Samothrace**, sculpture, 4160
- Vidocq, Eugène**, his life, 4930, 5073
pictures, 4930, 5073
- Vienna**, besieged by the Turks, 2528, 3158
capital of Austria, 2576, 2853
picture, 2855
taken by Napoleon, 2530
- Vienna, Congress of**, 2576, 2967, 3020, 3464; picture, 2575
- Vigier, Jean**, his love for his mother, 4071
- Vigilance Committees**, 1834
- Vikings**, came to England, 430
invited to rule in Novgorod, 3624
old ships at Christiania, 3602
picture, 431
Scandinavian warriors, 3417, 3592
- Villa de Cura**, native, picture, 4503
- Villager**, and the viper, fable, 3310, 5238
- Villeneuve, P. C.**, defeated by Nelson, 4360
- Vincent de Paul**, story of his life, 3009
- Vinci, Leonardo da**: see Leonardo da Vinci
- Vine**, bears grapes, 646
- Vineyards**, great numbers in France, 2396
- Viola**, how to grow, with picture, 5271, 5279
- Violet colour**, 1935, 4507
- Violet ground beetle**, 3264; picture, 3261
- Violets**, bed of violets, picture, 1610
dog-tooth: see Adder's Tongue
garden varieties, 5271
how to treat them, 927, 1610, 2134, 5271
marsh, 5032; picture, 5033
varieties of Canadian, 2837, 2838
what they are like, 4111
- Violins**, beauty of old violins, 4864
how the notes are made, 2620
how the quality of sound varies, 4913, 4914
how to make a violin from a cigar-box, with picture, 2867
made at Cremona, 1015
music of the willing heart, story, 5204
strings and their sounds, 1775, 4863
- Viper**, 1374, 1380; picture, 1381
- Viper's bugloss**, 4970
description, 4283; picture, 4284
- Vireos**, in Canada, 3495
- Virgil**, great Roman poet, 67, 528, 5266
in house of Mæcenas, picture, 5216
life and writings, 5218
wrote the Æneid, 70
- Virgilæ**, name for the Pleiades, 3314
- Virgin**, constellation, picture, 2611

INDEX

- Virgin cork**, decoration, picture, 4349
Virginia, as slave-state, 2010
 colony of, 514, 525, 4036
 introduction of negroes, 516
 named after Elizabeth, 1021, 5394, 6131
 Raleigh's colonies in, 5394, 6131
 seceded, 2012, 3536
 western counties made into state of West Virginia, 2012
Virginia, the, Confederate name of the "Mer-rimac," 2014
Virginian nightingale, good singer, 2061
Virginians, The, story of the book, with pictures, 3363
Virgin's bower, clematis, 5276
Viscacha, animal, 670; picture, 667
Visualising, what it is, 4943
Vitellius, overthrew Otho, 531
Vittoria, battle of, 3360, 4364
Vizor, front part of a helmet, 157
Vladimir, ruler of Russia, 3624
Vladivostok, town, 3632, 3752
Vocal cords, how they work, 1634, 1635, 3957
Vodka, spirit drunk in Russia, 3746
Voice, effect of empty room, 1643
 how it is produced, 6293
 how it may be produced, 2051
 how the telephone carries it, 349
 how to make eidophone, with picture, 5295
 its different tones, 4913
 its overtones, 4916
 pictures made by the voice, 4072
 the difference between voices, 4072
 toy to disguise the voice, 6063
 when a boy's voice breaks, 4827, 6292
 when ears are covered by hands, 1643
 why do some people speak musically and other harshly, 5644
 why have some people more beautiful voices than others, 5644
 why we get hoarse, 2455
Volatile alkali, what it is, 1799
Volatile materials, 4823
Volatile oils, what they are, 2802
Volcanoes, how they are formed, 2621, 3859
 in America, 11
 in Hawaii, 2181
 in the moon, 2222; pictures, 2223
 in the Philippines, 2182
 Martinique eruption, 1878
 pictures, 408, 2491, 3231, 4387
 Vesuvius, 5314
 what they are, 5, 408, face 1062, 2075, 3229
 what volcanoes were thought to do, 1577
Vole, animal, 772; pictures, 771
Volga River, 3623, 3750, 3752
Volscians, enemies of Rome, 2002
Volta, **Alessandro**, invented voltaic cell, 2119, 4314; portrait, 4313
Voltaire, life and writings, 2524, 4054, 5221
 picture, 4053
Voluntary muscle, obeys the will, 2626
Vortex box, how to make, with picture, 4674
Vortex ring, what it is, 3467
Vosges Mountains, 2754
Vowel flame, Tyndall's invention, 4918
Vowels, how we sing them, 4076
 the difference between a vowel and a consonant, 4077
 the many vowel sounds, 4913
Vulcan, made armour for Achilles, 68
 made shield for Aeneas, 72
 Roman god, 2075
Vulcan, name of a supposed planet, 2423
Vulcanising, process of, 5678
Vulcanite, hardened rubber, 2135, 3545
Vulture, with pictures, 1341, 1343
Vulture, the, Andre's ship, 3812
- W**
- Wagner, Richard**, 3250, 5093
Wagram, Napoleon at, picture, 2531
Wagtail, 2218; pictures, 1744, 2217
Waimangu geyser, picture, 4441
Wairoa River, in New Zealand, 1462
Waistband, how to make one, 1280
 how to put it on, with picture, 835
Wakefield, battle of, 2533
Wake-robin, the Trillium, 2838
Wake-whin: see cuckoo-pint
Walden, 6301; extract from book of H. D. Thoreau
Waldi Tora, bridge, with picture, 30
Wales, British settlements, 196
 conquered by Edward I., 118, 747
Wales, Prince of, crest won at Cressy, 750
 first prince of Wales, with picture, 2703
 how the title arose, 748
 prince and princess in India, picture, 1705
Walker, Helen, how she saved her sister's life, with picture, 2204
Walker, Horatio, art of, 4152
Walker, John, invented lucifer match, 775
Walking, how to find out how fast one walks, 2350
 why a man can walk along a wire, 4749
 why it is easier to walk on a rough surface than a smooth one, 3694
 why we go slower uphill, 3437
 why we swing our arms, 2455
 with eyes shut, 1642
Wall, what happens when we run into one, 4744
Wall, garden grown on a, 5924
Wallaby, kangaroo, with picture, 862, 863
Wallace, Dr. Alfred Russel, evolution theory, 856; portrait, 851
 studied birds of paradise, 1738
 travels on the Amazon, 4498
Wallace, L., his story, Ben Hur, 5225
Wallace, William, betrayed to the English, picture, 123
 led the Scots against the English, 118, 748
 monument at Stirling, picture, 5013
Wallachia, an independent kingdom, 3150
 forms part of Roumania, 3220
 under Russian and Turkish rule, 3159
Wall barley, with picture, 1337
Waller, Edmund, poem: see Poetry Index
Wallenstein, General, 2528
Wallflower, a European plant, 5270
 how to grow it, 1350, 3278, 3398
Wall knot, how to make, with picture, 236
Wall-paper, is it true that green wall-paper poisons us? 5575
Wall-pepper, a stone-crop, 4285
Walls, of Antonine, Hadrian, etc.: see Antonine, Hadrian, etc.
Walnut, as food, 1965
 black, 5446; with picture, 5439
 in its green pod, picture, 1971
 new varieties of, 3484, 3487
Walnut-tree, what the wood is like, 4998
 with picture, 1965, 3651
Walpole, Horace, minister, 1094
 pleased with Chatterton's work, 5320
Walpole, Sir Robert, minister of George I., 2382, 2540, 2710; picture, 2379
Walrus, its life story, 1091; picture, 1089
Walsingham, Sir Francis, statesman, 2535
Walter the Penniless, Crusader, 1587
Wand, trick, and picture, 3174
Wandering Jew, the legend of, 820
Wandering stars, name for planets, 2609
Wapiti, savage deer, and picture, 381, 382
War, are wars necessary? 5485
 cannot be decided peacefully, 3241
 how a meeting was held at Geneva, 2968
 is there any good in war, 5485
Warbeck, Perkin, Pretender, 3086
Warble-fly: see Ox-bot
Warblers, family of birds, 2057
 in Canada, 3497
Ward, John Q. A., life and work, 4846
 statue of Washington, picture, 4306
Warmth, and clothes, 682, 3381
 how the body is warmed, 4114
 where does our warmth come from, 5959
Warner, Seth, took Forts Ticonderoga and Crown Point, 984, 1820
Warner, Susan, life, 2046
Warning, game, 574
War of 1812, causes of, 2900
 effect on Canada, 746
 its effects, 3534
 naval operations, 1398

See also Battles; United States

INDEX

War of the Spanish Succession: see Spanish Succession, war of the
Warren, Admiral, in command of fleet at Louisburg, 540
Wars, American Revolution, 977, 2897, 3538
 Canada, rebellion of, 746
 Civil War, 3536
 Creek Indian, 1399
 French and Indian, 884, 979
 Indian, 2558
 Indian in the West, 3537
 Indian torture of captives, 17
 King George's war, 881
 King William's war, 880
 Mexican, 1830, 3535
 of Carthage, 5511
 Philippine, 2184
 Queen Anne's War, 880
 songs of American, 2957
 Spanish, 2188, 3538
 Texan War for Independence, 1828
 United States and France, 2900, 3533
 United States and Tripoli, 2900, 3533
 war of 1812, 745, 1398, 2901, 3534
 warfare between fur-trading companies, 5148
See also Battles; Civil War; Colonies; Revolution; United States (history)

Warsaw, town, and picture, 3744, 3746
Warships, of Henry VIII.'s time, picture, 840
Wars of the Roses, 756, 2533
 how they got their name, picture, 753
Wart-hog, and picture, 338, 334
Warton, Thomas, portrait, 4099
Washington, Booker T., life, 2914
Washington, George, administration, 3533
 as president, with pictures, 1390, 1394
 birthday, why celebrated, 4464
 conduct of the Revolution, 988
 ends the Revolution, with pictures, 992
 farewell to the army, 1388
 journeys to the French, with picture, 882
 life, with portrait, 787
 portraits painted of, 4148, 4149
 sends Nathan Hale out as a spy, 3811
 statues made of, 4841, 4842, 4850
 takes command of American army, 984
 Thanksgiving Proclamation of 1789, 4467

Pictures

American Army under Washington crossing the Delaware River, by E. Leutze, 989, 4135
 as a young man, painted by C. W. Peale, 4154
 at Valley Forge, 989
 delivering his first address as president, 1387
 farewell to his generals, 993
 inauguration of, 1391
 portraits, 787, 1707, 3532
 statue of, by J. Q. A. Ward, before the N. Y. City Sub-Treasury, 4306
 Washington's trip, 883
Washington, Lawrence, brother of Geo. Washington, 882
Washington, Martha Custis, life, with portrait, 387, 786
Washington City, burned, 1399, 3534
 description, with pictures, 1708
Washington Square, description, 4308; picture, 4311
Washington, State of, admitted, 3537
Wasp, the, and Frolic, 1398, 2902
Wasps, can sting only once, 780
 distinguish colours, 4216
 life-story, 2826
 nests of wasps, pictures, 2823, 2825
 sting, through microscope, picture, 2322
 the poison in their bodies, 6021
 what the brain of a wasp is like, 3563
Watch, and its parts, picture, 1535
 primitive watch, pictures, 1539, 5165
Water, air dissolves in water, 3762
 as standard of measurement, 3814
 boiling water can be made hotter, 3384
 boils away as gas, 512
 breathing under water, 3763
 calmed by oil, 2505, 5020
 can be compressed a little, 3948
 cold water cracks a hot glass, 1062
 crackles when a red-hot poker is put in it, 3095

Water, different forms in the air, 1644
 does not fall out of a revolving pail, 3974
 effect on alkalies, 1800
 exists in three forms, 359
 expands as it gets cooler, 3036
 filtering, 5524
 found in other worlds, 3382
 found on Mars, 2427
 full of tiny creatures, 46
 great store of heat, 4475
 hard and soft water, 1569
 helped to shape the earth, 406
 how affected by frost, 3694, 4546
 how it is heated by lime, 4338
 how it petrifies wood, 5250
 how much water there is in the sea, 2620
 how people are able to stay a long time under water, 1638
 how to carry it, 4032
 how to drink glass of water covered with hat, trick, 5112
 how water comes to us, 2102
 how water is made, 1193
 how wonderful water is, 2101
 in blood, 6093
 in flowers, 5641
 is a compound, 940
 is a mobile liquid, 5020
 its graphic formula, 1798
 its high specific heat, 4475
 its surface is curved, 3760
 its weight, 643
 law of floating things, 3096
 makes seeds sprout, 1778
 may be split up, 1194
 more water than dry land, 3004
 necessary for life, 548, 2697
 New York's supply of, 5115
 oil will not mix with water, 37, 2505
 reason for freezing not known, 4825
 reflects things from a distance, 3034
 ripples on water, 1055
 running water purer than stagnant, 4547
 runs because it has little cohesion, 617
 simple experiments with air and, 5898
 size of rain-drops, 5384
 small things float towards large, 3865
 specific gravity, 3815
 stops radiant heat, 4320
 the great marvel of water, 1167
 the magic of a glass of water, 580
 the mysterious bottle of, 6013
 the world in the waters, 2335
 time to heat, 3430
 water disappearing from the earth, 3071
 what happens when it evaporates, 2235
 what makes water boil, 512
 what the unit of mass is based upon, 3671
 what to do if one falls into water, 3397
 what water is made of, 1039, 1666, 1797
 where spring water comes from, 1987
 where the oceans came from, 3429
 why a wet plate gets dry if left alone, 2505
 why boiling water feels cold, 3384
 why colours appear on water, 1993
 why does it dry up in hot weather? 5687
 why does it splash when it drops to the ground? 5637
 why does sugar dissolve quicker in hot water than in cold? 5578
 why hot water cleans things, 4230
 why it gurgles when it comes out of a bottle, 3756
 why it has no taste, 3695
 why it swells when heated, 4546
 why it will not burn, 5022
 why the steamship carries water, 73
 why water puts out fire, 1775
 why we can see through water, 1266
 with and without heat, 4048

Pictures of water

drop of water under the microscope, 2321
 girl with a glass of water, 2101
 how the waters carve the earth, 402
 how the waters creep over the earth, 409
 how water is made up, 1041
 the water that is everywhere, 1171
 wonder of dripping water, 1296

INDEX

- Water-avens**, and picture, 4965, 4966
Water Babies, story of the book, and pictures, 3801
Water-beetles, pictures, 2322, 3261
Watercress, in New Zealand, 3827, 4967
 what it is like, 4970; picture, 4967
Water-crowfoot, and picture, 4960, 4961
Water-dropwort, and picture, 4965
Water-falls, Reichenbach, 5674
 Tummelbach, 5673
Water-hemlock, 4112, 4970
Water-hen, 1951
 nests of, 5778
 pictures, 1744, 1950
Watering-can, picture, 233
Water-lilies, and picture, 4960, 4962
 the white lily, a legend, 1068
Waterloo, battle of, 1095, 2277, 3464, 4364
 picture, 1092
Water-mint, and picture, 4969, 4970
Water-mole, where it lives, 1364
Water of life, liquors called, 5644
 story, and pictures, 4373
Water-pipes, in frosty weather, 3694
 the bursting of, 5524
Water-plantain, and picture, 4963, 4966
Water-power, in United States, 2662
Waterproof: see Mackintosh
Water-scorpion, picture, 3301
Water-seller, The, by Velasquez, 760
Water-shrew, picture, 673
Water-silver, in chemistry, 154
Water-soldier, what it is like, 4962
Water-spider, lives under water, 3303
Water-spout, how it is caused, 2459
Water-thyme, what it is like, 4962
Water-vapour, protects us from sun, 4321
Water-violet, and picture, 4969
Water-vole, harmless animal, 772
Watson, Sir William, improved the Leyden jar, 2116, 4314; portrait, 2113
Watt, James, invented a steam-engine, 610, 655
 made engines for the steamboats, 2472
 watching a kettle steam, picture, 611
Watteau, Antoine, his picture, The Embarkation for the Isle of Cythera, 4594
 work as painter, 4587
Watts, George Frederick, his pictures: Sir Galahad, 873
Watts, Isaac, life, 1996; with portrait, 1999
 poems: see Poetry Index
Waugh, Edwin: see Poetry Index
Wave, how a wave is caused, 1056
 how a wave moves, 4757
 how waves radiate, picture, 3531
 instances of vibration, 3469
 seventh wave is not bigger, 2235
 what are the wild waves saying? picture, 1412
 why oil calms them, 2605
 why waves break on each side of a channel at the same time, 1056
 why waves curl over and break, 3979
Waved umber moth caterpillar, picture, 3411
Waverley, first of Waverley Novels, 1493
 story of the novel, 1496
Waverley Novels, story of them, 1493
Wax vesta, General Waxvestas and his family, how to make, and picture, 457
 how it is made, and pictures, 2353
Waxwing, bird, picture, 1736
 cedar, 3494
Wayne, Anthony, called "Mad Anthony," picture, 985
 drives British out of Georgia, 1387
Wealth, real wealth of a nation, 3617
Weasel, and picture, 137, 140
 dwelling of, 5414
Weather, decided by atmospheric pressure, 3946
 effect of earth's distance from sun, 3240
 how to foretell the weather, 2504
 how to study it, 2969
 scientific name, 2504
 some days hotter than others, 3639
 what Great Britain's weather is due to, 1860
Weather Bureau of the United States, in U. S. Agricultural Dept., 1597
Weather-glass, how to make one, 4354
Weatherly, F. E.: see Poetry Index
Weather-signal, why a cone is hoisted at the seaside, 5794
Weather-vane, an easily made, 5664
 how to make one, and picture, 2669
Weaver-bird, nests of, 1746, 5784
 pictures, 1737, 5780
Weavers, settled in England, 752
 weaver and the cloth, puzzle, and picture, 2260, 2350
Webb, Captain, swam the Channel, 4324
Weber, Carl von, composer, 3252
Webster, Daniel, portrait bust of, made, 4342
 statue of, made, 4844
Webster, John, poet, 3330
Wedding-rings, their origin, 1370
Wedgwood, Josiah, his life, 4473
Wednesday, how it got its name, 86, 428
Weeds, how to treat them, 573, 3278
 roadside plants and weeds, with pictures, 4185
Week, what it is, 80
Wegmann, F., as inventor, 2670
Weight, depends on gravity, 3671
 effect of earth's pull, 543, 3234
 effect of magnetism, 3761
 hot or cold things weigh the same, 3762
 lb. and oz. should not be written in plural form, 5524
 size and weight of things, 3813
 theory of falling weights: see Falling bodies
 weight of ice and water, 4339
Wei-hai-wei, British territory, 1879
Weisenthal, Charles F., attempts a sewing-machine, 1621
Weka rail, bird, 1953; picture, 1431
Well, how to make a well with a reel, and picture, 2111, 4352
Welland Canal, acquired by Canada, 1240
Wellington, Arthur Wellesley, Duke of, after Waterloo, 4364
 as a boy, in colour, face 4355
 buried in St. Paul's, 1095, 3362
 commanded English troops, 2276, 3360
 did not say "Up Guards, and at them," 5524
 gift to Mme. Bonaparte, 4911
 his life, 4362
 king of Spain's present to, 760
 portrait, 4355
 surveying field of Waterloo, 4363
 tomb in St. Paul's, picture, 5013
 writing by candle-light, in colour, 652
Wellington, capital of New Zealand, 1464
Wellington, New Zealand province, 1462
Wells, Dr., one of the discoverers of anaesthesia, 4201
Wells, E. G., The Day of the Comet, extract from, 5509
Welsh mountain sheep, a fine breed, 380
Wener, Lake, in Sweden, 3600
Wentworth, one of the men who first crossed the Blue Mountains, 355
Wesley, Charles, poems: see Poetry Index
 portrait, 1999
 wrote hymns, 1100, 1996
Wesley, John, founded the Methodist Church, 1996
 his life, 3698; pictures, 1999, 3696
 wrote hymns, 1100
Wessex, former kingdom, 428, 4035
 wisest maid in Wessex, story, 2302, 4007
West, Benjamin, a painter of portraits, 2468
 his life and art, 4147
 picture of Regulus, 5511
West, Charles, tried to lay a cable, 2474
Western Australia, 1362; pictures, 1363
Western Church, foundation, 3150
Western Ghats, mountains, 1546
West Indian herring, 210
West Indian land crab, and picture, 2584
West Indies, mistaken for India by Columbus, 1877
 story of the islands, 1878
 their name, 7, 53, 1877
 West Indian people, picture, 1874
West Point, attempt to betray, 3812
West River: see Si-kiang
West Virginia, admitted, 3536
 organised from anti-secession counties of Virginia, 2012
Westinghouse, George, as inventor, 2670
Westland, New Zealand province, 1464
Westminster, horses for nothing at, story, and picture, 4636
 story of Big Ben: see Big Ben

INDEX

- Westminster Abbey**, contains the chapel of Henry VII., 1156
its building, 434, 598, 1157
not its real name, with picture, 5524
tales of, 4635; pictures, 1156, 1165
- Westphalia, King of**: see Bonaparte, Jerome
- Westphalia, Peace of**, 2528, 2966
- Westward Ho!** story of the book, 3661
- Westwood, Thomas**: see Poetry Index
- Wethersfield (Conn.)**, founding of, 524
- Wetter, Lake**, in Sweden, 3600
- Wexford**, taken by Cromwell, 1889
- Weyler, General**, treatment of Cubans, 2184
- Whale**, a devoted parent, 5328
does not spout water, 5524
is a mammal, 5524
life-story, and various kinds, 1081, 1088
lives a long time, 2327, 2328
pictures, 51, 1083
- Whalebone**, where it comes from, 1082
- Whale-headed stork**, its beak, 1956
- Wharton, Henry**, in "The Spy," 4281
- What are these boys and girls doing?** puzzle picture, 6006, 6060
- What is it?** game, 2490, 2570
- What is its name?** game, 2772
- What is wrong?** game, 5292
- Wheat**, exhausts the soil, 903
fields in New South Wales, pictures, 1357
grasses, picture, 1333
grown with the aid of nitrates, 1798, 3341
harvest in Canada, picture, 3344
harvest in the wheatfield, picture, 1148
how grown and harvested, pictures, 4081
how wheat grows, with pictures, 1146
importance as a food, and picture, 2923
imported wheat, 1144
improvements in grinding, 2670
in Canada, 2264, 5365
in Manitoba, 214
in the United States, 2422
increase in price, 5170
is a grass, 1331
sheaves, pictures, 1143, 4079
where wheat comes from, pictures, 1145
yields the best food, 2078
- Wheatear**, bird, 2056; picture, 2053
- Wheatstone, Sir Charles**, his work in telegraphy, 4316; pictures, 4313, 4315
- Wheel, Earl's Court wheel**, picture, 2801
effect of oil on, 4601
has a speed limit, 684
how great wheels were built, 2801
why it goes round and stops, 683
why we cannot see the spokes when it turns quickly, 5024
- Wheelbarrow**, for carting, 233
how to make, and picture, 3069
- Wheelbarrow race**, and picture, 4242
- Wheelwright, Rowland**, his picture, Joan of Arc taken by English, 126
- Whelk**, its peculiar shell, 1410
pictures, 51, 1414, 1416, 1417, 2589
terror to other shell-fish, 2590
- When the blind led the blind**, story, 1982
- Where is it?** game, 2356, 2490
- Whewell, William**, his puzzle, 4351, 4453
- Whay**, why one could live on it, 2792
- Whigs**, a political party, 984
elect W. H. Harrison, 1830
- Whimbrel**, bird, and picture, 1958, 1959
- Whinchat**, and egg, pictures, 1744, 2053
- Whip-poor-will**, in Canada, 3489
- Whipping-stitch**, how to do, and picture, 577, 578
- Whirlpool**, cause, and picture, 4743
in a tumbler, 5668
- Whirlpool Rapids**, 680
- Whiskey**, does it make people warmer? 5574
- Whisper**, what it is, 4078
- Whistle**, that a boy can make, and pictures, 3823
- Whistler, James McNeill**, art of, 4152
picture by, 4158
- Whitechurch Down**, legend, 3208
- White, John**, governor of colony at Roanoke Island, 6134
does not find his granddaughter, 6135
makes water-colours of the Indians, 6131
pictures, 6132-6135
- White, Stanford**, made pedestal of Farragut statue, 4847
- White admiral**, butterfly, 2992
picture in colour, face 2982
- White ant**: see Termite
- Whitebait**, fish, 204, 205, 206
- White-beam**, tree, picture, 3446
- White-breasted crow**, picture, 1847
- White campion**, 3950; picture, 3949
- White Captive**, the, a statue, with picture, 4843, 4844
- White City**: see World's Fair, Chicago
- White currant**, picture, 651
- Whitefield, George**, life, 3699
picture, 3701
- Whitefish**, of the Great Lakes, 3898
- White House**, The, burned, 1399, 3534
description, with pictures, 1712
famous ladies of, 387
- White Man's Burden**, what it is, 4039
- White Man's Grave**, where is the, 5641
- White Nile**, river, 4260
- White Palace**, at Agra, 1550
- White Plains**, battle of, 986
- White poplar**, tree, and picture, 3190
- White rot**: see Marsh-pennywort
- White Sea**, 3626, 4720
- White shark**, 2443
- White Ship**, story, with picture, 2477
wreck of, 594
- White stork**, picture, 1953
- Whitethorn**, name for hawthorn, 3449
- Whitethroat**, bird, 2056; picture, 2053
- White water-lily**, picture, 4960
- White whale**, its uses, 1088
- White willow**, flower, picture, 3191
- Whitewood**: see Tulip-tree, 5624
- Whiting, William**, poems: see Poetry Index
wrote a hymn, 2000
- Whiting**, picture, 203
- Whitman, Walt**, life, 1485
portrait, 1475
portrait, by John W. Alexander, 4157
- Whitney, Eli**, as inventor, 1825, 2667, 4307
- Whittier, John Greenleaf**, his life, 1482
pictures, 1475, 1480
poems: see Poetry Index
portrait bust of, 4848
- Whittington, Dick**, and his cat, story, and picture, 326
did not owe his fortune to a cat, 5524
- Wholemeal bread**: see Brown bread
- Whycocomagh**, Cape Breton Island, picture, 5603
- Whydah**, weaver-bird, 1746
- Why is it?** game, 2570, 2686
- Why the swallow builds on the wall**, 6198
- Why the winds blow**, 5953
- Why things are done**, 5794, 5650, 5853, 5962
- Wick**, in names, 427
- Wilberforce, William**, how he worked for the slaves, 3700; picture, 3705
- Wilcox, Ella Wheeler**: see Poetry Index
- Wild cabbage**, picture, 4108
- Wild cherry**, picture, 4109
- Wilderness**, battle of the, 2019
- Wild hyacinth**: see Bluebell
- Wild oats**, picture, 2977
what does sowing, mean, 5961
- Wild rose**: see Dog-rose
- Wilhelmshaven**, large naval port, 2750
- Wilkes, Lieut. Charles**, discovered land in Antarctic, 5051
surveyed Samoa, 2190
- Wilkins, Mary E.**: see Freeman, Mrs. M. W.
- Willard, Frances**, wrote a song, 3740
- Willey How**, fairies of, tale, 1321
- William**, prince of Orange: see William III. of England; and William the Silent
- William** son of Henry I., drowned, 592, 2477, 2532, 2702
- William I.**, called the Conqueror, 5942
aided the clergy, 4709
began the building of the Tower, 1158
how he became king, 436
married Matilda of Flanders, 3458
pictures, 435, 436, 593
what kind of king he was, 2702
- William II.**, king of England, 5942
built part of the Tower, 1158
called Rufus, 2702; portrait, 2710
killed, 592
persecuted the clergy, 4709

INDEX

- William III.**, king of England, 1029, 2535, 2708, 3463, 5951
 landing at Torbay, picture, 2709
William IV., king of England, 5952
 his short reign, 1096
William I., emperor of Germany, 2531
 death, 2532
 proclaimed emperor, picture, 2531
 statue in Berlin, 2748
William II., emperor of Germany, 2748
 pictures, 2747, 2756
William Penn, the, figurehead of, 4841
William the Lion, of Scotland, 596, 3082
William the Silent, prince of Orange, 124, 3260
Williams, Frederick Ballard, an artist, 4152
Williams, John, 5775
Williams, Roger, founded Rhode Island, 520
Williamsburg, story dealing with flood of, 4958
Willing Heart, music of the, story, 5204
Will of Charles Lounsbury, 5203
Willoughby, Lieutenant, how he defended a powder magazine, 1913
Willoughby, Sir H., navigator, 845, 4722
 portrait, 4725
Willow-herb, pod, picture, 3833
Willow-pattern plate, story, 329
Willows, for baskets, pictures, 395
 in Acadia, picture, 5806
Willow-tree, and picture, 3191
 catkins, 2835, 2836
Willow wren, egg, picture, 1744
Wills, W. J., explorer, 357; picture, 358
Wilmington, resists capture, 2018
 taken, 2019
Wilson, Dr., body found, 5054
Wilson, Woodrow, picture, 5055
Wilson, Mrs. Augusta Evans, life, 2046
Wilton Hall, could lad of, legend, 3648
Winchester, old Roman city, 198
Winchester Cathedral, how it was repaired, and picture, 3043
Wind, and air pressure, 1057
 how it lifts an aeroplane from the earth, picture, 6088
 making a toy to measure the wind, and picture, 1607
 story of wind and signboards, 5342
 what are the trade winds, 4182, 5954
 what is a whirlwind, 5954
 what changes the way of the wind, 1863
 what makes it whistle, 1057
 where it goes when it does not blow, 1056
 why are some winds warm and some cold, 5954
 why it is stronger at a height, 4550
 why the winds blow, 5953
 wind and the sun, fable, and picture in colour, 3853
Wind-flower: see Anemone
Windmill, how to make a paper one, and picture, 98, 2872
 much used in Holland, 3456
Window, why a noise breaks it, 911
Windpipe, what it is, 1636
Windsor (Conn.), founded, 524
Windward, what it means, 4565
Windward, an exploring vessel, 4726
Wine, largely made in France, 2396
 what it is, 1872
Winged bulls, brought from Assyria, 4973, 4977, 4978; picture, 4973
Winged Horse, The, picture, 2615
Winged stick insect, picture in colour, face 3141
Winkelried, Arnold von, gained freedom for Switzerland, 122
 gave his life for Switzerland, picture, 123
 monument at Stans, 2966
 Switzerland's national hero, 3105
Winking, what it does for the eye, 424
Winkle, what it is, 2590
Winks, a game, 2573
Winnabagoes, medicine-men of, with picture, 1829
Winnipeg, capital of Manitoba, Canada, 214, 1246, 6054, 6190
 description, 5366
 scenes in, pictures, 1329, 4094
Winser, lighted London with gas, 656
Winter, sports of, in Canada, 5209
 views in winter, pictures, 2509, 2510
 why it is cold, 411, 3032
Winter, winter's white diamonds, 2509
Winter aconite, plant, 1816
Winter cherry, 1203
Wintergreen, 3052; picture, 4969
Winter's Tale, A, story of the play, 550
Wire, why one can walk along it, 4749
Wire gauze, its effect on the flame of a gas-jet, 4319
Wireless telegraphy, how it works, with pictures, 3522
 now in use, 1099, 1421
Wisconsin, admitted, 1836, 3535
Wisdom teeth, when they come, 2098
Wishart, George, died for his faith, 5068
Wishing table, story, and picture, 1905
Witch, of forest tree, story, 710
 the raid of the witches, story, and picture, 815
 witch's ring, story, 464
Wizard King, puzzles of the, 5357, 5452
Wizard of Wabasha, trick, and picture, 4765
Wizard's castle in the air, picture, 1111
 story, 1110
Wizard's figure, puzzle, and picture, 5112
Wizard's wand, and the magic purse, 3063
Woden, gave us the name Wednesday, 86
 sending ravens around world, picture, 35
 was the god of war, 428
Wolf, and crane, fable, with picture, 560, 877
 boy who cried Wolf! 3310, 5238
 communication between wolves, 5325
 dog and the wolf, fable, 1979
 how captured, 6148
 in Indian legend, 1063
 of same family as the dog, 500
 pictures, 51, in colour, 134
 race with wolves, story, with picture, 963
 stories of the young, 5478
 that came in the night, story, 1054
 used to live in our woods, 49
 what kind of animal it is, 141
 wolf, game, 2572
 wolf and lamb, fable, with picture, 1793
 wolf and the kid, fable, with pictures, 2144, 2329, 4755
 wolf in sheep's clothing, fable, with pictures, 463, 2303
Wolfe, Charles: see Poetry Index
Wolfe, General James, death at Quebec, 540
 in battle of Louisburg, 884
 takes Quebec, 219, 885; with pictures, 878, 1091
Wolf-spider, with picture, 3303, 3301
Wollaston, William Hyde, improved the microscope, 2320
Wolsey, Thomas, cardinal, a counsellor of Henry VIII., 844
 how he fell from power, 2706, 2916
 the story of his life, 2379
 pictures, 2379, 2389, 2707
Wolverine, 5152, 6148
Woman, against a king, story, 2203
 and empty cask, fable, with picture, 3853
 famous ladies of the White House, 387
 life of under Mohammedan religion, 5890
 new (the) woman, 3063
 who saved her family, story, 4445
 who sold her shawl, story, 5224
 women writers of the United States, 2043
Wombat, its life-story, 864; picture, 863
Women's suffrage, in Finland, 3753
Wonder, its importance in life, 5132
Wonderful (the) friends, 6192
Wonderful things that live on the earth, picture in colour, face 48
Wood, how it is petrified by water, 5250
 how the grain runs, 338, 1345
 how to know woods, 4998
 how wood was burned, 800
 is a bad conductor of heat, 4183
 making a collection of woods, 5200
 microbes cause wood to rot, 1988
 soft and hard, 1617
 staining and polishing, 2256
 the atoms moving in wood, 4342
 timber logs floated, picture, 215
 warps in damp weather, 3865
 what knots in wood are, 5169
 why it cracks when heated, 4442
 why it feels warmer than iron, 3382
 why wood floats, picture, 635
 writing with ink on, 5666

INDEX

- Wood, Father**, made a piano, 1015
Wood, Jethro, as inventor, 2668
Wood, Mrs. Henry, her life, 2596
Wood-anemone, 2338
Wood-ant, 2943; picture, 2941
Woodbine: see Honeysuckle
Wooden Horse, the victory of, 70
Wooden trestle bridge, with picture, 29
Woodlark's egg, picture, 1744
Wood-lice, picture, 3297
Wood meadow-grass, picture, 1341
Wood-melic, a grass, with picture, 2976
Woodpecker, 1960; pictures, 1741, 1960
 nest of, 5781
 varieties in Canada, 3040
Wood-pigeon, the stock-dove, 2214
Wood-pulp, Canadian trees for, 3784, with picture, 3787
 made into paper, 888
Woodroffe, Nina
Woodruff, 4616; picture, 4611
Woods, how they are carpeted, 3951
 picture, 3649
Wood-shrimp, damages timber, 2587
Woodstock, story about Charles II., 1495
Woodworth, Samuel, author of *The Old Oaken Bucket*, 2953
Wool, grown for Flemish looms, 3458
 how to crochet shawl, and pictures, 5107
 preparing wool in Australia, picture, 1359
 production of in U. S., 2658
 trade encouraged by Black Prince, 752
 where does the wool go when we get holes in our stockings? 5643
Wool ball, how to make, with pictures, 1197
Wool dolls, how to make them, with picture, 342
Woolly bear caterpillars, picture, 2983
Wool mat, how to make, with picture, 2486
Woolpit, the pits of Woolpit, legend, 3166
Worcester, battle of, 1025, 1892
Worde, W. de, type improvements, 3574
Word-making, a game, 2137
Words, different words for same thing, 3239
 how many words we use, 2330
 new words made, 1269
 the number in English language, 2330
 we think chiefly in words, 1367
Wordsworth, William, life and education, 3908
 lived at Rydal Mount, 4341
 poems: see Poetry Index
 portrait, 3907
 quotations from poems, 5257
 what he said of Nature, 3240
 why he was great, 940
 wrote of Alban, 482
Work, Henry Clay, author of *Marching through Georgia*, 2957
Work, is it good to have to work, 5575
 is it necessary for all living creatures to work? 5578
Work-basket, how to make it, 6063
 what to do with a girl's work-basket, 456, 577, 835, 935, 1077
Workbox, how to make a girl's workbox, with picture, 451
World, before Columbus, 2
 could not sustain all things born, 2078
 does change go on in other worlds, 5957
 first voyage round, 60
 how the land and water are placed, 3006
 increase of population, 1644
 is becoming drier, 3071
 is not yet all discovered, 2331
 is there a world beyond our senses, 5385
 its history is always being made, 2883
 men who made the world known, 53
 number of worlds, 414
 plants of two worlds, with pictures, 4285
 the size of it, 624
 what Columbus found, 4
 what it is, 1
 why do worlds not collide? 5384
 why the worlds are round, 1131
 world on a table, story, 5206

Pictures of World

- finding the other side of the world, 1458
 how the world's story was first told, 5099
 the great worlds that travel through space, face 149
 the Old World, 2
 the procession of the worlds, 3

- World's Fairs**, in Chicago, 2418, 3538, 5513
 in Philadelphia, 3537
 in St. Louis, 3538
Worms, breathe underground, 912
 how they make tunnels, 51
 make soil fertile, 3255; picture, 3257
 why they still live when cut in two, 2454
Wormwood, its family, 4112
Worry, why do we worry? 5573
Wotton, Sir Henry: see Poetry Index
Wouter Van Twiller, days of, 5533
Wras, a fish, 1411
Wreck, picture, 2279
Wren, Sir Christopher, built part of Westminster Abbey, 1167
 how he built St. Paul's Cathedral, 1160
 the church spires of Wren, picture, 1163
Wren, egg and nest, pictures, 1744
 how long it lives, 2328
 how the wrens live together, 2060
 in Canada, 3495
 Jenny Wren: see Jenny Wren
 King Wren, legend, 2377
 nests of, 5783
Wrestlers, how to make wrestlers from clothes-pegs, 934
Wright, Edward, helped to give us Mercator's projection, 1751
Wright, Wilbur and Orville, description of first attempts at aeroplanes, 6081
Wrinkles, the cause of, 2878
Wrist, how it is formed, 2545
Writers, American songs and song-writers, 2953
 famous American writers, 1475
 famous writers of 19th century, 2307
 flowers of British authors, 4609
 how they think, 4944
 of other lands, 5217
 of the hymns, 1995
 some Canadian, 4302
 some great English writers, 4675
 women writers of the United States, 2043
Writing, a new way of writing figures, 3424
 capital I, J, C, E, and G, 2890
 capital M, N, S, L, and D, 3130
 five new capital letters, 2650
 five new letters, 969
 how men destroyed all the writings long ago, 54
 how men learned to write, 3399
 how prehistoric men wrote, picture, 3400
 how to write in cipher, 4137
 learning to write capital letters, 2410
 learning to write little words, 1930
 letters above and below the line, 1448
 letters below the line, 1689
 letters with loops above the line, 1209
 man did not always write, 3978
 on clay, 3863, 5099
 Tom and Nora and the pothooks, 487
 Tom and Nora make more letters, 729
 Tom and Nora write figures, 3239
 Tom and Nora write their names, 2171
 Tom and Nora write with ink, 3371
 why do we press hard on down strokes when writing? 5642
 with ink on wood, 5666
Writing board, how to make it, with picture, 1071
Writs of Assistance, 1598
Wrought iron bridges, 19
Wryneck, bird, picture, 3894
Wupper Valley railway, picture, 91
Württemberg, agricultural country, 2754
Wyant, Alexander, life and art, 4151
 picture by, 4156
Wyatt, Sir Thomas, led a rebellion, 2534
Wycliffe, John, translation of the Bible, 752
Wyoming, admitted, 3537

I

- Xavier, Francis**, his conversion, 3990
 portrait, 3981
 went to Japan, 366
 wrote hymns, 1995
Xenon, element in argon, 1295
Xenophon, how he led the Greeks from Cunaxa, 5064, 5076
Xerophytes, what they are, 5031

INDEX

Xerxes I., king of Persia, defeated by Greeks, 5129
his reign, 5062
X-rays, due to radium, 1295
what they are, 5175

Y

Yachting, ice, in Canada, 5210
Yak, lives in Tibet, with picture, 277
Yakuts, Siberian race, and pictures, 3751
Yang-tse-kiang, great river of China, 106
Yankee Doodle, history of song, 2955
Yard, length, 3670
Yards, of ships, and picture, 3913
Yarkand, where it is, 3934
Yarmouth, Can., shipping point, 5601
Yawl, ship, and picture, 3913, 3914
Yawning, why it is infectious, 3863
why we yawn, 778
Year, changes of the, 1
for a year and a day, legend, 3648
what a year is, 80
Yeast, how it acts in dough, 1143, 3241
turns sugar into alcohol, 907
what yeast is, 1872
why does it make bread rise and biscuits bubble, 5957
Yellow, why things go yellow with age, 3865
Yellowbird, summer, 3497
Yellow Dwarf, story, and picture, 1050
Yellow fever, conquest of, 3200
controlled in Panama, 5634
how it was conquered, 3146
Yellow Fever Commission, The U. S., work done by, 3200
Yellow flag, flower, 5272
Yellow hammer, 2057; picture, 2055
a woodpecker, 3040
Yellow horned poppy: see Horned poppy
Yellow loosestrife, 4970; picture, 4967
Yellow mountain saxifrage, picture, 4835
Yellow oat grass, picture, 1335
Yellow pea, 4111
Yellow rattle, lives on other plants, 3330
Yellow River: see Hwang-ho
Yellow Sea, where it is, 363
Yellowstone National Park, in Rocky Mountains, picture, 402
Yellowstone Park, description, with pictures, 587
Yellow water-lily, picture, 4960
Yenisei River, its length, 3752
Yew-tree, American, 5438
pictures, 3453
poisonous, 5438
Yezo, northern island of Japan, 364
Yoke, a ship's rudder yoke, 4564
Yokohama, opened to foreign trade, 366
port of Tokio, 370; picture, 363
Yonge, Charlotte M., her life, 2599
portrait, 2593
Yoritomo, first shogun of Japan, 365
tomb at Yokohama, 370
York, a Roman city, 198
as the birthplace of Constantine, 5321
crock of gold, legend, 1983
York, Duke of, New York named in honour of, 521
York, Canada, captured, 1399
(Toronto) capital of Upper Canada, 745; picture, 744

York, House of, struggle for the crown of England, 756
Yorktown, siege and surrender of, 992, 2014
Yosemite Valley, picture, 322
You mustn't laugh, game, 2573
Young, Dr. Thomas, discovery about light waves, 5042
what he thought of the eye, 4509
wrote on energy, 3552
Young, Ella Flagg, as school superintendent, 3066
Young, Mrs. Alice Hegan Rice, sketch of, 2050
Young Italy Society, 4100
Young Turks, party of reformers, 3226
Youth, land of, story, and pictures, 2093
Yutbide, Augustine de, rebelled against the Spaniards, 4383
Yucatan, colonies founded by Spain, 4383
peninsula of Mexico, 4381
Yukon, Canadian district, 1247, 5599
Yukon Territory, description of, 1916
government of, 1330
mountain scene in, picture, 1917

Z

Zacatecas, city of Mexico, picture, 4391
Zama, battle of, 5264
Zambesi River, bridge at Victoria Falls, picture, 24
enters the Indian Ocean, 4254
its great bridge, 20
pictures, 1770, 2618
Zanzibar, celebrated for its cloves, 4262
flag, picture in colour, 1640
where Livingstone's body was carried, 283, 1373
Zebra, its family, 270; pictures, 51, 270
Zebra sole, picture in colour, face 200
Zeeland, united with Holland, 3462
Zend-Avesta, Bible of the Persians, 5066
Zeppelin, Count, his airship, 6081
picture, 162
Zero, what absolute zero is, 4049
Zeus, god of thunder, 5126
statue at Olympia, 5128
Zeuxis, Greek painter, 4585
Ziczac, bird, 1222; picture, 1229
Zinc, dug from the ground, 288
in Canada, 5600
production of in U. S., 2660
Zinc chloride, how it is formed, 1667
Zodiac, its constellations, 2615
Zoo, barn-door cock for zoo, with pictures, 933
horse for our toy zoo, and picture, 1608
how to make, with pictures, 575
rabbit and pig, for zoo, with pictures, 829
that never was, 5926
Zoo-guess, game, and pictures, 2138
Zoroaster, portrait, 2995
what is known of him, 3000
Zoroastrianism, religion of Medes and Persians, 5058 H 5429
what it teaches, 3000
Zuccaro, dismissed from the Escorial, 5499
Zulus, South African people, 1766
Zürich, its industries, 2968
its interesting letters, 2966
picture, 2963
Zürich, Lake, in Switzerland, 2960
Zutphen, battle of, 467
Zuyder Zee, its formation, 3456, 3458
Zwingli, Huldreich, reformer, 2963

SPECIAL INDEX OF POEMS & NURSERY RHYMES

THIS is probably the most complete index of verses for boys and girls appearing in any book. The names of poets are in the general index, but in this special index a poem is entered three times, so that it can be found if we know either the title, the first line, or the author's name.

The collection of poetry in the Children's Encyclopædia is made up of separate pieces, and they represent every kind of verse. There are sonnets, songs, odes, dramatic pieces, humorous verses, hymns, and psalms; nursery rhymes in English and French; folk-lore songs of Germany; songs set to music; nonsense verses; and selections from Shakespeare and many other poets whose works are too long to quote as a whole. Illustrations are not indexed.

Not only is this collection the biggest and most representative collection ever made for children, but it is arranged on an educational plan, which not merely aims at cultivating a love for poetry in the minds of boys and girls, but also attempts to build up in the minds of readers a conception of the general nature of a poet's work, and of the meaning of particular poems. Every poem, moreover, has a special introduction, giving information about the author or the poem. The Poetry section, therefore, is a true education in the very best kind of literature.

All the poems of an author are together under his name. They are *indented* under the name, that is to say, the titles begin a little way on in the line, not straight with the other lines. This means that all poems with these short lines are by the author whose name is above them.

To find a poem look under the first line, the title, or the author's name. No notice is taken of "A" or "The," so that if you are looking for "The Spider and the Fly" you should look up "Spider."

A

A, B, C, tumble down D, 3795
Abide with me, 3965
Abject, stooping, old and wan
Above Ben Adhem and the Angel, 1124
Above the edge of dark appear the lances of
the sun, 3419
Across the narrow beach we flit, 4266

Addison, Joseph
Spacious Firmament on High, The, 4014
Twenty-third Psalm, The, 568
Afar in the Desert, 1885

Ah! vous dirai-je, Maman 4400
Ahab Mohammed, 4265
Aladdin, 4922
Alas! how light a cause may move, 6118

Aldrich, Thomas Bailey
Memory, 3964

Alexander, Mrs.
All Things Bright and Beautiful, 4853
Burial of Moses, The, 5905
Once in Royal David's City, 2152
Alexander Selkirk, 4852

Alishan, Leon
Baby and the Brook, The, 4014
All are architects of Fate, 3966
All peacefully gliding along, 4607
All the Children, 5243
All the World's a Stage, 2921
All Things Bright and Beautiful, 4853
All things shall pass away, 471
All worldly shapes shall melt in gloom, 3843
All's Right With the World, 701
All that thou art not makes not up the sum,
1561

Allerton, Ellen P.
Beautiful Things, 3558

Allingham, William
Fairies, The, 567
Robin Redbreast, 472
Wishing, 1033

Alma-Tadema, Miss Laurence
If No One Ever Marries Me, 3560
King Baby on His Throne, 3560
Little Sister, The, 3559
March Meadows, 3559
Nesting Hour, The, 3559
New Pelisse, The, 3559
Playgrounds, 3559
Twilight Song, A, 3559

Alone I walked the ocean strand, 4208
Ambitious Sophy, 4014

American Flag, The, 1884
Among the fine old kings that reign, 5389
Ancient story I'll tell you anon, An, 2401
And what is so rare as a day in June? 2193

Anderson, Alexander
Cuddle Doon, 3557
Angels' Whisper, The, 2808

Announced by all the trumpets of the sky,
3348

Answer to a Child's Question, 472
Antony, the Great Speech of Mark, 2917
Apple Winds, The, 5244
Arab's Farewell to His Steed, The, 702
Arctic (The) Indian's faith, 5389
Ariel's Song, 317

Armageddon, 3964
Armies in the Fire, 95
Arming of Pigwiggan, 1856
Arnold, Sir Edwin
Armageddon, 3964

Arnold, Matthew
Forsaken Merman, The, 3345
Quiet Work, 5242
Shakespeare, 4013
Around the green gravel the grass grows
green, 3799

Arrow and the Song, The, 4210
Arthur O'Bower had broken his band, 3029
As Dolly was milking her cow one day, 2407
As down in the sunless retreats, 1885
As I walked by myself, 1036
As I was going by Charing Cross, 2405
As I was going o'er Westminster Bridge, 3029
As I was going to St. Ives, in colour, 2811
As I was going to sell my eggs, 4016
As I was going up Pippin Hill, 3275
As I went over the water, the water went over
me, 3795

As I went through a garden gap, 3029
As I went to Bonner, in colour, 2813
As in the sunshine of the morn, 3637
As Johnny went to school with books, 4694
As life's unending column pours, 5139
As little Jenny Wren, 3633
Aspiration, 4014
As soft as silk, as white as milk, 3029
As the days lengthen, 2128
As through the land at eve we went, 6120
Assyrian came down like the wolf on the fold,
The, 2292

At Atri, in Abruzzi, a small town, 6227
At Flores in the Azores, 4205
At Last, 3636
At midnight, in his guarded tent, 5377
At Sea, 4524
At the king's gate the subtle noon, 5048
Attend all ye who list to hear our noble Eng-
land's praise, 4523
Au clair de la lune, 4530
Auld Lang Syne, 3274

Austin, Alfred
Queen and the Flowers, The, 1883
Autumn, 2193
Autumn is a gipsy when the frost is in the
air, The, 5907
Aye, tear her tattered ensign down, 1558
Away, birds, away, 3349

INDEX OF POETRY

B

Baa, baa, black sheep, with music, 1786

Baby, 568

Baby and I, 3276

Baby and the Brook, The, 4014

Baby, baby, by, 3559

Baby, baby, lay your head, 472

Baby moon, 'tis time for bed, 3559

Baby was sleeping, A, 2808

Baby's got a new pelisse, 3559

Baby's got no legs at all, 3559

Babyland, by Ella Wheeler Wilcox, 1491

Babyland, by George Cooper, 2810

Bailey, Philip James

End of Life, The, 1033

Bailiff's Daughter, The, 5374

Baillie, Joanna

Good-night, good-night, 1035

Bairnies cuddle doon at night, 3557

Baker's wife has sacks of gold, The, 4530

Ballad of Agincourt, The, 2721

Banks, George Linnaeus

What I Live for, 5047

Banner of England, not for a season, 3791

Bannockburn, 824

Barbara Frietchie, 4851

Barbault, Mrs. Anna Letitia

Life, 5244

Barber, barber, shave a pig, 3349

Barefoot Boy, The, 2195

Bargain, The, 3793

Baring-Gould, Rev. S.

Now the day is over, 5490

Bark that held a prince went down, The,

Barking sound the shepherd hears, A, 3556

Baron's Last Banquet, The, 4208

Barr, Matthias

Only a Baby Small, 2723

"Barry Dane:" see Logan, John E.

Bat, bat, come under my hat, 1568

Bates, David

Speak Gently, 4265

Bath Time, 3559

Battle of Blenheim, The, 565

Battle of the Baltic, 1854

Battle-Hymn of the Republic, 4527

Baxter, Richard

Lord, It Belongs Not to my Care, 4397

Be Patient with the Children, 4014

Beautiful Things, 3558

Beautiful faces are those that wear, 3558

Becker, Charlotte

Envoy, 5374

Bed-time, 3559

Bedouin Song, 5046

Beech Tree's Petition, The, 471

Bees, The, with music, 3970

Begbie, Harold

The Sun Was Falling Off to Sleep, 5380

What Every Wise Child Should Do, 5614

Beggar Maid, The, 822

Behind him lay the gray Azores, 567

Behold her, single in the field, 1561

Behold Shock-headed Peter, 4691

Believe me if all those endearing young

charms, 6120

Bell of Atri, The, 6227

Bells, The, 3273

Bells of Shandon, The, 5906

Bennett, William Cox

Lullaby, O Lullaby, 4014

Béranger, Pierre Jean de

Grandmother's Tale, The, 1489

Mary Stuart's Farewell, 2402

Beside the ungathered rice he lay, 1034

Best School of All, The, 3128

Better Land, The, 5240

Better Things, 5488

Better to smell the violet cool, 5488

Betty Pringle had a little pig, 4528

Between nose and eyes a strange contest

arose, 3557

Between the dark and the daylight, 3419

Bid me to live, and I will live, 3793

Big and Little Things, 3637

Billy, Billy, come and play, 3349

Billy Boy, 3277

Birch and green holly, boys, 1568

Birds are singing round my window, 3965

Birds in Summer, 4210

Birds of a feather flock together, 4211

Birth of Christ, The, 2152

Bivouac of the Dead, The, 5379

Black we are, but much admired, 3029

Blackbird (yes, blackbirds delight in warm

weather), A, 3421

Blake, William

Lamb, The, 700

Laughing Song, A, 3272

Nurse's Song, 1856

Piping Down the Valleys Wild, 5376

Sleep, Beauty Bright, 1857

Tiger, The, 1125

Bless you, bless you, bonnie bee, 3276

Blessed are they that mourn, 4855

Blessings on thee, little man, 2195

Blewett, Jean

Song of the golden sea, 4607

Blind Boy, The, 1033.

Blow, blow, thou winter wind, 2915

Blow, wind, blow, and go, mill, go, 4652

Boadicea, 470

Bobby Shaft is gone to sea, 2922

Bogie Man, The, with music, 4654

Boker, George Henry

Dirge for a Soldier, 1032

Bonar, Dr. Horatius

Thy way, not mine, O Lord, 4013

Bonnie Jean, 5140

Bonny Kilmeny gaed up the glen, 4393

Bostwick, Helen B.

King's Picture, The, 5240

Bounce Buckram, velvet's dear, in colour,

2154

Bourdillon, Francis William

Light, 6120

Bow, wow, wow, whose dog art thou? 4015

Bow-wow, says the dog, 2922

Bowles, William Lisle

Caged Bird, The, 3558

Boy and the Angel, The, 4207

Boy stood on the burning deck, The, 1276

Boy's Song, 701

Bravest battle that ever was fought, The,

4690

Break, Break, Break, 5046

Breaking waves dashed high, The, 5138

Brewer, Ebenezer Cobham

Little Things, 1033

Brian O'Lin had no breeches to wear, 3276

Bridge, The, 2193

Bring back your sheep, 4212

Brook, The, 95

Brown, F. C.

Hundred Years to Come, A, 5488

Browning, Elizabeth Barrett

Child's Thought of God, A, 568

Court lady, A, 6117

Musical Instrument, A, 1783

My Kate, 5908

Poet and the Bird, The, 5489

Sleep, The, 5377

Sweetest Lives, 1558

Valediction, A, 1558

Woman's Shortcomings, A, 4209

Browning, Robert

All's Right with the World, 701

Aspiration, 4014

Boy and the Angel, The, 4207

Grow old along with me, 2293

Home Thoughts From Abroad, 2005

How they Brought the Good News, 2291

Incident of the French Camp, 3966

Last Ride Together, 5140

Little thoughts from, 6229

Lost Leader, The, 6118

Patriot, The, 4651

Pied Piper of Hamelin, The, 344

Prospect, 1032

Brownlow, E. B.

Work, 5388

Bryant, William Cullen

Blessed are they that mourn, 4855

Death of the Flowers, The, 4651

Forest Hymn, A, 2403

Gladness of Nature, The, 4266

Indian at the Burial-place of his Fathers,

An, 5242

Planting the Apple-tree, 5240

Robert of Lincoln, 2481

INDEX OF POETRY

Bryant, William Cullen
 Song of Marion's Men, 1559
 To a Waterfowl, 2810
 To the Fringed Gentian, 4855
Bugle, The, 3347
Builders, The, 3966
Bull, John
 God Save the King, 5244
Bunyan, John
 Pilgrim, The, 2004
 Shepherd boy's song in Pilgrim's Progress, The, 3842
 Burial of Moses, The, 5905
 Burial of Sir John Moore, The, 701
 Burial of the Linnet, The, 3420
Burns, Rev. James Drummond
 An Evening Hymn, 4207
Burns, Robert
 Auld Lang Syne, 3274
 Bannockburn, 824
 Bonnie Jean, 5140
 Cotter's Saturday Night, The, 4011
 John Anderson, 3842
 Man's a Man for a' that, A, 4690
 My Heart's in the Highlands, 1560
 Red, Red Rose, A, 5047
 To a Mountain Daisy, 4524
 Bury the Great Duke, 4647
 Butterfly and the Snail, The, 3637
 Butterfly perched on a mossy brown stile, A, 4924
 Butterfly's Ball, The, 1034
 Buttons, a farthing a pair, 3798
 Buy me a milking-pail, 3349
 By Nebo's lonely mountain, 5905

By the moon's silver ray, 4530
 By the rude bridge that arched the flood, 1560
 By the sea, 1855
 Bye, Baby Bunting, 826
 Bye, oh, my baby, 3795
Byrom, John
 Christians, awake, 2150
Byron, George Gordon, Lord
 Destruction of Sennacherib, The, 2292
 Eve of Waterloo, The, 5378
 Prisoner of Chillon, The, 3125
 She Walks in Beauty, 3347
 Solitude, 4649
 To Thomas Moore, 6119
 Vision of Belshazzar, The, 2127

C

Caged Bird, The, 3558
Campbell, Thomas
 Battle of the Baltic, 1854
 Beech-tree's Petition, The, 471
 Hohenlinden, 1035
 Irish Harper, 2403
 Last Man, The, 3843
 Lord Ullin's Daughter, 825
 Parrot, The, 1276
 Ye Mariners of England, 704
 Canadian Boat Song, A, 3028, 4605
 Canadian Song-sparrow, 5390
 Cane-Bottomed Chair, The, 5613
Carey, Lady Elizabeth
 True Greatness, 2723
Carey, Henry
 Sally in Our Alley, 3793
Cary, Phoebe
 Leak in the Dyke, The, 1781
Carroll, Lewis
 Lion and the Unicorn, The, 5614
 "Tweedledum and Tweedledee," 5380
 Walrus and the Carpenter, The, 1562
 Casabianca, 1276
 Castle-builder, The, 3558
 Cat's Tea-party, The, 1786
 Cataract of Lodore, The, 1274
 C'est la mère Michel qui a perdu son chat, 4530
Chadwick, John White
 His Mother's Joy, 4525
 Character of a Happy Life, The, 4013
 Charge of the Light Brigade, The, 1782
 Charley, Charley, stole the barley, 4015
 Cherry Ripe, 3346
 Chieftain to the Highlands bound, A, 825
Child, Mrs. Lydia Maria
 Thanksgiving Day, 4855

Child and Mother, 3797
 Child and the Snake, The, 2126
 Child's Evening Prayer, A, by Coleridge, 567
 Child's Evening Prayer, A, by Graves, with music, 3422
 Child's Thought of God, A, 568
 Child's Wish in June, 5483
 Children's Hour, The, 3419
 Christians, Awake, 2150
 Christmas Carol, A, 3419
 Christmas Hymn, A, 4920
 Christmas is coming, the geese are getting fat, 4924
 Christmas Morning, 2151
Cibber, Colley
 The Blind Boy, 1033
 Clap, clap handles, 4016
Clare, John
 Poet's Last Thoughts, A, 4266
 Clear and cool, clear and cool, 2648
 Close his eyes; his work is done, 1032
 Cloud, The, 5239
Clough, Hugh
 Say Not the Struggle Naught Availeth, 3274
 Cock-a-doodle-doo, in colour, 1567
 Cock doth crow, The, 2128
 Cock is crowing, The, 1276
 Cock Robin got up early, 3030
 Cock's on the housetop, blowing his horn, The, 925
 Cocks crow in the morn, 824
 Cold and raw the north wind doth blow, 2405
Coleridge, Samuel Taylor
 Answer to a Child's Question, 472
 Child's Evening Prayer, A, 567
 Good, Great Man, The, 4397
 Raven and the Oak, The, 2404
Coleridge, Sara
 Months, The, 471
 Colours of the Flag, 5390
 Columbus, 567
 Come, all ye weary wanderers, 2151
 Come, dear children, let us away, 3345
 Come, let us plant the apple-tree, 5240
 Come, let's to bed, 827
 "Come little leaves," said the wind one day, 2292
 Come, live with me, and be my love, 5047
 Come, take up your hats, and away let us haste, 1034
 Come when you're called, 1568
 Common Natures, 3557
 Common Things, 4210
 Composed upon Westminster Bridge, 3966
 Conclusion, The, 3842
 Contentment, 2648
Cook, Eliza
 Fern and the Moss, The, 4853
 King Bruce and the Spider, 2479
 Mouse and the Cake, The, 4209
 Old Arm Chair, The, 2194
Cooper, George
 Babyland, 2810
 The Leaves and the Wind, 2292
Cornwall, Barry
 Fisherman, The, 1276
 Horned Owl, The, 2481
 Sea, The, 4852
 Stars, The, 704
 Stormy Petrel, The, 4526
 Coronation, 5048
Cory, William
 Heraciltus, 5376
 Cotter's Saturday Night, The, 4011
 Could ye come back to me, Douglas, Douglas, 1884
 Could you count the bright stars peeping, 3027
 Council of Horses, The, 3127
 Cannel to Girls, 1783
 Country life is sweet, A, 1276
 Court Lady, A, 6117
 Court of Fairyland, in colour, frontis., vol. 2
 Courtin', The, 1490
Cowper, William
 Alexander Selkirk, 4852
 Boadicea, 470
 Dispute Between Nose and Eyes, 3557
 Dog and the Water-lily, The, 2126
 Epitaph on a Hare, 2127
 Faithful Bird, The, 3127
 God moves in a mysterious way, 1855

INDEX OF POETRY

Cowper, William

- John Gilpin, 2641
- Loss of the Royal George, The, 472
- Nightingale and the Glow-worm, The, 700
- Retired Cat, The, 1784
- Cradle Song, A, 1857
- Cradle song, 5908
- Croak, said the toad, I'm hungry, I think, 4015
- Crocus, The, 4688
- Cromwell, our chief of men, who through a cloud, 3965
- Cross patch, 1563
- Crossing the Bar, 1561
- Cry of the Dreamer, The, 4689
- Cuckoo and the Jackass, The, with music, 3796
- Cuckoo's a bonny bird, The, 3276
- Cuddle Doon, 3557
- Cunningham, Allan**
- At Sea, 4524
- Curfew Bell, The, 3025
- Curfew tolls the knell of parting day, The, 2003
- Curly Locks, with music, 1563
- Cushy cow, bonny, let down thy milk,

D

- Dad has a boat, 4212
- Daffodils, The, 96
- Dainty, diddlety, my mammy's maid, 2922
- Dainty shepherd maiden, A, 4212
- Daisy at Christmas, A, 4922
- Dame, get up, and bake your pies, in colour, 2156
- Dame Trot and her cat, 3349
- Dance a Baby, with music, 2123
- Dance, little baby, dance up high, 3421
- Dance of the Flowers, The, 3027
- Dance to your daddie, 1036
- Darling mother, shall I say, 4400
- Day's Done, The, 4922
- Daybreak, 3793
- De Bell of St. Michel, 5391
- Death, 3792
- Death, be not proud, though some have called thee, 3792
- Death of Napoleon, 2293
- Death of the Flowers, The, 4651
- Death of the Old Year, 2153
- Deed and a Word, A, 4690
- Defence of Lucknow, The, 3791
- Deserted House, The, 3636
- Deserted Village, 5739
- Despot's heel, The, 2482
- Destruction of Sennacherib, The, 2292
- Dew was falling fast, the stars began to blink, The, 1881
- Dey say dat in the winter, 4855

Dibdin, Charles

- Tom Bowling, 1785

Diedin, Thomas J.

- Sir Sidney Smith, 1853

Dickens, Charles

- Ivy Green, The, 2403
- Dickery, dickery, dare, 4015

Dickinson, Mary Lowe

- If We Had But a Day, 3347

- Did you hear of the curate who mounted his mare? 3272

- Did you ne'er think what wondrous beings these? 4527

- Diddle, diddle dumpling, my son John, 4398

- Diddle-Diddle-Dumpty, 3421

- Diller, a dollar, A, in colour, 2294

- Ding, dong, bell, with music, 2484

- Dirge For a Soldier, 1032

- Discontented Apples, The, 2724

- Discoverer, The, 4396

- Dispute between Nose and Eyes, 3557

- Do you know what the birds say? The sparrow, the dove, 472

- Do you wish the world were better? 2126

- Dobbin's Friend, 2723

- Doctor Faustus was a good man, 3798

- Doctor Foster went to Glo'ster, 2405

Dodge, Mary Mapes

- Billy Boy, 3277
- Dobbin's Friend, 2723
- Frolic of Johnny the Stout, The, 2720
- Good Little Girls, The, 3277
- Little White Feathers, 3277

Dodge, Mary Mapes

- One and One, 3277
- Terrible Ball, The, 1857
- Three Old Ladies, The, 3277
- Willie's Lodger, 2724
- Does the road wind up hill all the way? 4683
- Dog and the Water-lily, The, 2126
- Domett, Alfred**
- Christmas Hymn, A, 4920
- Donne, Dr. John**
- Death, 3792
- Dondney, Sarah**
- Lesson of the Water Mill, The, 4689
- Things That Never Die, 2723
- Douglas, Douglas, Tender and True, 1884
- Dove says Coo, coo, what shall I do? The, 2922
- Down from yon distant mountain height, 4014
- Drake, Joseph Rodman**
- American Flag, The, 1884
- Drayton, Michael**
- Arming of Pigwiggen, 1856
- Ballad of Agincourt, The, 2721
- Dream of Eugene Aram, The, 2123
- Dribble, dribble, trickle, trickle, 3276
- Drummond, William Henry**
- De Bell of St. Michel, 5391
- "Ole Tam on Bord-a Plouffe," 5387
- Duck and a drake, A, in colour, 4267
- Duncan, Mrs. Mary Lundie**
- Jesus, Tender Shepherd, 4208
- Dust, The, 5488

E

- Earth has not anything to show more fair, 3966

Edgar, Sir James

- The Canadian song-sparrow, 5390

Elder, Mrs. Lilla T.

- Mother's kisses, 1125
- My Menagerie, 2194
- O Mammy's Pickaninny, 4855
- There's Room at the Top, 1491
- Uncle Sam's Young Army, 3418
- Elegy on the Death of a Mad Dog, 1855
- Elegy Written in a Country Churchyard, 2003
- Elliot, Henrietta Robins**
- Why It Was Cold in May, 5489
- Ellixir, The, 3965
- Elizabeth, Elspeth, Betsy and Bess, in colour, 2294

Emerson, Ralph Waldo

- Good-bye, 5139
- Hymn of Concord, 1560
- Mountain and the Squirrel, The, 924
- Nation's Strength, A, 4525
- Snow Storm, The, 3348
- En passant dans un petit bois, 4925
- Enchanted Shirt, The, 96
- End of Life, The, 1033
- England and America in 1782, 4649
- England's sun was slowly setting, 3025
- Envoy, 6374
- Epitaph on a Hare, 2127
- Ere on my bed my limbs I lay, 567
- Eternal Father, Strong to Save, 4852
- Ethereal minstrel! pilgrim of the sky, 2127
- Eve of Waterloo, The, 5378
- Even such is time, that takes in trust, 3842
- Evening Hymn, An, 4207
- Evening Hymn, 1560
- Every evening, after tea, 5492
- Every lady in this land, 4652
- Every one that flatters thee, 2920
- Swing, Mrs.**
- Burial of the Linnet, The, 3420
- Excelsior, 704

F

- Faintly as tolls the evening chime, 4605
- Fair Daffodils, 2125
- Fair girl was sitting in the greenwood shade, A, 3348
- Fair maid who, the first of May, The, 1277
- Fair stood the wind for France, 2721
- Fairest action of our human life, The, 2723

INDEX OF POETRY

- Fairies, The, 567
 Fairy Life, The, 2915
 Fairy Lullaby, A, 2915
 Fairy Song, 700
 Fairy Tempter, The, 3348
 Fais dodo, Colas, mon petit frère, 4530
 Faith, 4206
 Faithful Bird, The, 3127
 Farewell, A, 96
 Farewell, a long farewell to all my greatness, 2916
 Farewell, farewell, thou beauteous clime, 2402
 Farmer went trotting upon his grey mare, A, in colour, 2813
 Farmer's dog leap'd over the stile, A, 2726
 Farragut, 2404
 Father in heaven, hallowed be Thy name, 4396
 Father William, 566
 Father's Advice to His Son, 2920
 Fatherland, The, 924
 Fear death?—to feel the fog in my throat, 1032
 Fern and the Moss, The, 4853
 Fiddle-de-dee, fiddle-de-dee, 1277
 Fiddle-Dee-Dee, 5050
 Fidelicity, 3556
Field, Eugene
 Fiddle-Dee-Dee, 5050
 Good-Children Street, 2006
 Rock-a-by Lady, The, 4923
 Shuffle-Shoon and Amber-Lock, 3841
 Teeny-Weeny, 5492
 Wynten, Blynken, and Nod, 92
Finch, Francis Miles
 Nathan Hale, 1559
 Finis, 4690
 Fir-tree, The, 3023
 First Nowell, The, 4920
 First the farmer sows his seed, 3795
 Fisherman, The, 1276
 Five little fairies, bright as the day, 972
 Five little pussy-cats, invited out to tea, 1786
 Five little sisters, walking in a row, in colour, 3845
 Flight of Peter Bell, The, 3963
 Flight of the Arrow, The, 4396
 Flight of Youth, The, 5242
 Flour of England, fruit of Spain, 3029
Follen, Eliza Lee
 Oh, Look at the Moon, 3026
 For every evil under the sun, 1568
 For I dipt into the future, far as human eye could see, 5243
 For want of a nail the shoe was lost, in colour, 2812
 Forest Hymn, A, 2403
 Forsaken Merman, The, 3345
Foster, Stephen Collins
 Massa's in the Cold, Cold Ground, 5376
 My Old Kentucky Home, 3346
 O, Boys, carry me 'Long, 2194
 Old Folks at Home, 1558
 Found in the garden dead in his beauty, 3420
 Fountain, The, 701
 Four-and-twenty tailors went to kill a snail, 827
 Four things a man must learn to do, 5377
 Fox and His Wife, The, in colour, 568
 Fragment of a rainbow bright, A, 1853
France, Nursery Rhymes of
 Ah! vous dirai-je, Maman, 4400
 Au clair de la lune, 4530
 C'est la mère Michel qui a perdu son chat, 4530
 En passant dans un petit bois, 4925
 Fais dodo, Colas, mon petit frère, 4530
 Je suis un petit poupon, 4400
 La Bergère, 4212
 La boulangère a des écus, 4530
 Les Petits Bateaux, 4212
 Pan! Qu'est-ce qu'est là? 4400
 Ramène Tes Moutons, 4212
 Sur le pont d'Avignon, 5142
 Friends and Flatterers, 2920
 Friends, Romans, countrymen, lend me your ears, 2917
 Frog he would a-wooing go, A, with music, 1492
 Frolic of Johnny the Stout, The, 2720
 From breakfast on through all the day, 1035
 From the desert I come to thee, 5046
 From the leafy maple ridges, 5390
 Frost Looked Forth, The, 5136
 Frugal snail, with forecast of repose, The, 4264
 Full knee-deep lies the winter snow, 2153
G
 Gaelic Lullaby, 5388
Gates, Ellen M. H.
 My Mother's Hands, 2648
 Gather ye Rosebuds while ye may, 1738
Gay, John
 Butterfly and the Snail, The, 3637
 Council of Horses, The, 3127
 Gentle Jesus, meek and mild, 5243
 Gentlefolks, in my time I've made many a rhyme, 1853
Germany, Folk-songs of, in English verse
 Dance of the Flowers, The, 3027
 Fir-tree, The, 3028
 God Only Knows, 3027
 Hobby-horse, The, 3028
 Son of My Heart, 3027
 Song of the Two Hares, 3027
 Were I a Birdie Too, 3027
 Gift on the Finger, A, 3795
Gilder, Richard Watson
 Great Nature is an Army Gay, 4526
 Ginevra, 1882
 Girl in the lane that couldn't speak plain, The, 2726
 Girls and boys come out to play, with music, 1036
Gisborne, Thomas
 Worm, The, 1856
 Give me your ear, good children all, 1857
 "Give us a song!" the soldiers cried, 1884
 Give thy thoughts no tongue, 2920
 Gladness of Nature, The, 4266
 Go 'way, go 'way, don't ring no more, ole bell of Saint Michel, 5391
 Go, lovely rose, 5907
 Go to bed first, 4211
 Goblin Market, 1849
 God be with thee, my beloved, 1558
 God of our fathers, known of old, 4854
 God made such nights, 1490
 God moves in a mysterious way, 1855
 God Only Knows, 3027
 God Rest You, Merry Gentlemen, 2149
 God Save the King, 5244
 God Sends Love to You, 3419
Goethe, Johann W. von
 Haste not! Rest not, 1559
Goldsmith, Oliver
 Deserted Village, The, 5739
 Elegy on the Death of a Mad Dog, 1855
 Good dame looked from her cottage, The, 1781
 Good, Great Man, The, 4397
 Good King Wenceslas, 922
 Good little boys should never say, 1688
 Good Little Girls, The, 3277
 Good name in man or woman, dear, my lord, 2920
 Good people all of every sort, 1855
 Good-bye, good-bye to summer, 472
 Good-bye, proud world! I'm going home, 5139
 Good-Children Street, 2006
 Good-morrow to you, Valentine, 2726
 Good-night, 472
 Good-night, Good-night! 1035
 Goodly host one day was mine, A, 3026
 Goosey, goosey, gander, face 1408; with music, in colour, 2294
 Gossips of the village—see, The, in colour, 4267
Gould, Hannah Flagg
 Name in the Sand, A, 4208
 Grandmother's Tale, The, 1489
 Grave old clock on the mantelpiece, The, 4924
Graves, Alfred Percival
 Bees, The, with music, 3970
 Bogle Man, The, with music, 4654
 Child's Evening Prayer, A, with music, 3422
 Cuckoo and the Jackass, The, with music, 3796
 Ladybird, Fly, with music, 3028
 M. N. O., with music, 3275
 White Hart, The, with music, 3846
 see also Germany, Folk-songs of
 Gray Haired Old Farragut, 2404

INDEX OF POETRY

Gray, Thomas

- Elegy in a Country Churchyard, 2003
- Great A, little A, 4398
- Great A, little A, bouncing B, 3638
- Great Day for England, A, 2919
- Great King William spread before him, 3347
- Great Nature is an Army Gay, 4526
- Great, wide, beautiful, wonderful world, 824
- Greedy Boy, The, 922

Greenaway, Kate

- Five little sisters, walking in a row, 3845
- Little Miss Patty and Master Paul, 3845
- Look over the wall, and I'll tell you why, 3844
- Polly's, Peg's and Poppety's, 3845
- Prince Finikin and his mamma, 3844
- Three little girls were sitting on a rail, 3845
- Three tabbies took out their cats to tea, 3845

- Under the window is my garden, 3844

Greene, Albert Gorton

- Baron's Last Banquet, The, 4208
- Greenhouse is my summer seat, The, 3127

Gregory, Charles Noble

- Two Men, 5489

Greville, Sir Fulke

- On Sir Philip Sidney, 5487
- Groves were God's first temples, The, 2403
- Grow old along with me, 2293

H

- Hail, Columbia, 2647
- Hail, to thee, blithe spirit, 5137
- Half a league, half a league, 1782

Hall, Gertrude

- Dust, The, 5488

Halleck, Fitz-Greene

- Marco Bozzaris, 5377
- Halt! Who goes there? 4400
- Hamelin Town's in Brunswick, 344

Hamerton, S. C.

- Birth of Christ, The, 2152
- Hands are such dear hands, 4854
- Handy Pandy, Jack-a-Dandy, 4211
- Happiest Land, The, 1784
- Hark, hark! the dogs do bark, 728
- Harp that once through Tara's halls, The, 5906
- Harriman, Alice, In the Hop fields, 2647
- Hart he loves the high wood, The, 4528

Harte, Bret

- Heathen Chinese, The, 1561
- Harvest time, 4607
- Haste not! Rest not, 1559
- Have you heard of the Valley of Babyland? 1491
- Have you heard of the wonderful one-hoss shay? 5045

Hawkshawe, Mrs.

- Common Things, 4210

Hay, John

- Enchanted Shirt, The, 96
- Heathen Chinese, The, 1561
- He comes in the night! He comes in the night, in colour, 2155

- He looked at me so curiously, 3708
- He loves me, he don't, in colour, 4267
- He quickly arms him for the field, 1856
- He spoke of Burns; men rude and rough, 5050
- He that is down needs fear no fall, 3842
- He that would thrive, 925

- He was a rat, and she was a rat, 4924
- He was an apple, and she was an apple, 2724
- Heap on more wood! the wind is chill, 2150
- Hear the sledges with the bells, 3273
- Hector Protector was dressed all in green, in colour, 2813

Heine, Heinrich

- Lorelei, The, 1835
- Heights by great men, The, quotation from Longfellow, 4035

Hemans, Felicia

- Better Land, The, 5240
- Casabianca, 1276
- Homes of England, The, 923
- Pilgrim Fathers, The, 5138

- Henry was every morning fed, 2126
- Her arms across her breast she laid, 822
- Her hair was tawny with gold, 6117

Heraclitus, 5376

Herbert, George

- Elixir, The, 3965
- Here, a sheer hulk, lies poor Tom Bowling, 1785
- Here am I, little Jumping Joan, 827
- Here in this picture you can see, 4693
- Here lies whom bound did ne'er pursue, 2127
- Here we go round a ginger ring, 4528
- Here we go up, up, up, 4652
- Here's a poor widow from Babylon, in colour, 1565

Here's the Sulky Sue, 3349

Herrick, Robert

- Cherry Ripe, 3346
- Counsel to Girls, 1783
- Fair Daffodils, 2125
- Ternarie of Littles, A, 2810
- To Anthea, 3793

- Hey diddle, dinkety, poppety, pet, 3638

- Hey, my kitten, my kitten, 4652

- Hi, diddle diddle, 826

- Hiawatha's brothers, 5391

- Hick-a-more, hack-a-more, 3029

- Hickory, Dickory, Dock, with music, in colour, face 706

Hickson, William Edward

- Try Again, 3420

- Higgledy piggedly, here we lie, 1036

- Higgledy piggedly, my black hen, 1277

- High diddle ding, in colour, 2813

- Hill of success may be steep, boys, The, 1491

Hill, Aaron

- Common natures, 3557

- Hills o' Skye, 5388

- His fame shall never pass away, 1489

- His Mother's Joy, 4525

- Ho, for a frolic, 2720

- Ho, ho! quoth the frog, 4015

- Ho, my kitten, a kitten, 2922

- Hobby-horse, The, 3028

Hoffman, Dr.

- Hunter and the Hare, The, 4692
- Johnny Head-in-Air, 4694
- Shock-headed Peter, 4691
- Story of a Blackamoor, The, 4693
- Story of Fidgety Philip, The, 4691
- Story of Flying Robert, The, 4694

Hogg, James

- Boy's Song, 701

- Kilmeny, 4393

- Hohenlinden, 1035

Holland, Joseph Gilbert

- Christmas Carol, A, 3419

Holmes, Oliver Wendell

- Old Ironsides, 1558
- Two Armies, The, 5139
- What the Stars Have Seen, 2724
- Wonderful One-hoss Shay, The, 5045

Holyrood, 5138

- Home, Sweet Home, 470

- Home Thoughts from Abroad, 2005

- Homes of England, The, 923

Hood, Thomas

- Dream of Eugene Aram, The, 2123
- I Remember, I Remember, 923
- November in England, 4526
- Queen Mab, 1124
- Song of the Shirt, The, 2808

Hopkinson, Joseph, Hail, Columbia, 2647

- Hop, hop, hop, 3028

- Horned Owl, The, 2481

- Horse, long used to bit and bridle, A, 2480

Houghton, Lord

- Men of Old, The, 4525
- House that Jack built, pictures, 5743
- Housekeeper, The, 4264

- How beautiful is the rain, 5241

- How do you do, neighbour? 3349

- How does the water come down at Lodore? 1274

- How doth the little busy bee, 566

- How happy is he born or taught, 4013

- How Horatius Kept the Bridge, 1403

- How many miles to Babylon? 2810

- How many miles to Babylon? 3276

- How many pounds does baby weigh, 1784

- How pleasant the life of a bird must be, 4210

- How seldom, friend, a good, great man inherits, 4397

- How They Brought the Good News, 2291

- How to Write a Letter, 3419

- How would Willie like to go, 5047

INDEX OF POETRY

- Howard, Alice G.**
Sorrow, 4526
- Howe, Mrs. Julia Ward**
Battle-Hymn of the Republic, 4527
- Howitt, Mary**
Birds in Summer, 4210
Old Christmas, 5048
Spider and the Fly, The, 3555
- Howitt, William**
Wind in a Frolic, The, 348
- Hugo, Victor**
Stream and the Ocean, The, 2403
Humpty Dumpty sat on a wall, 968
Hundred years to come, 5488
Hunt is up, the hunt is up, The, 4524
- Hunt, Leigh**
About Ben Adhem and the Angel, 1124
Jenny Kiss'd Me, 3793
Hunter and the Hare, The, in colour, 4692
Hunting Song, 4524
Hush, baby, my dolly, I pray you don't cry, 3638
Hush, my dear, lie still and slumber, 5908
Hush! the waves are rolling in, 5388
Hush-a-bye, babbly, lie still with thy daddy, in colour, 4267
Hush-a-bye, baby, 4015
Hush-a-bye, Baby, on the Tree Top, with music, in colour, face 5615
Hush-a-bye, Colin, brother of mine, 4530
Hush'd was the evening hymn, 4207
Hymn (A) of Empire, 5391
Hymn of Concord, 1560
Hymn on the Nativity of My Saviour, A, 2151
- I**
- I am monarch of all I survey, 4852
I am tired of planning and toiling, 4689
"I am writing to mother," Alice said, 1125
I am! yet what I am who cares or knows? 4266
I bring fresh showers for the thirsting flowers, 5239
I cannot do the big things, 3637
I come from haunts of coot and hern, 95
I do not like thee, Doctor Fell, 3798
I do not want a puppy-dog, 4858
I had a little boy, 4211
I had a little moppet, 3638
I had a little nut-tree, in colour, 2294
I had a little pony, 2403
I had no thought of stormy sky, 5244
I have a little kinsman, 4396
I have a little shadow that goes in and out with me, 95
I have a little sister, they call her Peep, Peep, 3029
I have been here before, 4209
I have had playmates, I have had companions, 3556
I have seen you, little mouse, 2726
I hear thee speak of a better land, 5240
I heard men saying: Leave hope and praying, 3842
I know a child, and who she is, 3799
I know not that the men of old, 4525
I know not what sorrow is o'er me, 1885
I know this earth is not my sphere, 4014
"I lark on summer ev'ning w'en nice cool win' is blowin'," 5387
I live for those who love me, 5047
I love it, I love it, and who shall dare, 2194
I love little pussy, 3422
I love sixpence, pretty little sixpence, 1277; with music, 2405
I love you well, my little brother, in colour, 4267
I must not throw upon the floor, 5141
I often sit and wish that I, 4856
I often wonder if our Phil, 4691
I once had a sweet little doll, dears, 4525
I Remember, I Remember, 923
I said, Then, dearest, since 'tis so, 5140
I saw a ship a-sailing, 4652
I saw a sower walking slow, 3843
I saw three ships come sailing by, in colour, 2154
I shot an arrow into the air, 4210
I should like to rise and go, 1122
I sing the Birth was born to-night, 2151
I sprang to the stirrup, 2291
I stood and watched my ships go out, 5244
I stood on the bridge at midnight, 2193
I stood upon the plain, 5390
I strove with none, for none was worth my strife, 4690
I suppose if all the children, 5243
I swing to the sunset land, 5388
I think he had not heard of the far towns, 5742
I think when I'm a grown-up man, 2640
I Think When I Read, 5244
I Travell'd Among Unknown Men, 4921
I wandered lonely as a cloud, 96
I wasn't brave, I had to cry, 2640
I'd like to be a farmer, 3558
If all the ships I have at sea, 1782
If all the world were apple pie, 4652
If bees stay at home, 5909
If Candlemas Day be bright and fair, 1688
If I had as much money as I could spend, 1126
If I want to be happy, 5614
If ifs and ans, 2123
If no one ever marries me, 3560
If the old woman who lived in a shoe, 4850
If thou shouldst ever come by choice or chance, 1882
If wishes were horses, 2405
If you are to be a gentleman, 3798
If you order a person to bring you some chalk, 3424
If you sneeze on Monday, you sneeze for danger, 2405
If We Had But a Day, 3347
Il était une bergère, 4212
I'll introduce — just wait awhile, 4212
I'll sing you a song, 2123
I'll tell you a story, 2408
I'm a chubby little thing, 4400
"I'm writing to mother," Alice said, 1125
In Absence, 1561
In a cottage in Fife, 3030
In a crack near a cupboard, with dainties provided, 922
In April, 925
In days of yore, from Britain's shore, 2466
In his chamber, weak and dying, 2807
In London once I lost my way, 5142
In marble halls as white as milk, 3029
In Memoriam, extracts, 3959, 6119, 6120
In Praise of England, 2919
In summer I am very glad, 3559
In tattered old slippers that toast at the bars, 5613
In the hollow tree in the old grey tower, 2481
In the little Crimson Manual it's written plain and clear, 4607
In the name of the Empress of India, 2482
In the seaport of St. Malo, 4604
Inchcape Rock, The, 2125
Incident in a Railroad Car, An, 5050
Incident of the French Camp, 3966
Independence Bell, 6202
Indian at the Burial-place of His Fathers, An, 5242
Industry of Animals, The, 3274
- Ingelow, Jean**
Seven Times One, 3420
Story of Life, A, 5243
Into the sunshine, 701
Irish Harper, The, 2403
Is John Smith within? 4652
Is there, for honest poverty, 4690
Is this a time to be cloudy and sad, 4266
Isle of Long Ago, The, 4650
It happened on a summer's day, 3558
It is a beauteous evening calm and free, 1855
It is common, 5243
It is not growing like a tree, 1856
It is not the thing you do, dear, 4854
It is the spot I came to seek, 5242
It little profits that an idle king, 4650
It matters little where I was born, 5489
It settles softly on your things, 5488
It sleeps among the thousand hills, 4605
It was a summe evening, 565
It was nothing but a rose I gave her, 4922
It was roses, roses, all the way, 4651
It was the calm and silent night, 4920
It was the schooner Hesperus, 97
It's good to see the school we knew, 3128
I've watch'd you now a full half-hour, 4013
Ivy Green, The, 2403

INDEX OF POETRY

J

Jack and Jill went up the hill, 486; with music, 5245
 Jack Frost went out on a wintry day, 2152
 Jack Jingle went 'prentice, 4398
 Jack Spratt could eat no fat, 1278
 Jack Spratt had a pig, 4016
Jackson, Helen H.
 Coronation, 5048
 Like a blind spinner in the sun, 1835
 Jacky, come give me thy fiddle, 2405
 Jacques Cartier, 4604
 January brings the snow, 471, 1407
 Je suis un petit poupon, 4400
 Jealous Jack Frost, 2152
 Jenny kiss'd me when we met, 3793
 Jesu, Lover of my Soul, 4397
 Jesus bids us shine, 3966
 Jesus, tender Shepherd, hear me, 4208
 Jim and George were two great lords, in colour, 2294
 Jock of Hazeldean, 1856
 John Anderson, my jo, John, 3842
 John Cook had a little grey mare; he, haw, hum, 3798
 John Gilpin was a citizen, 2641
 Johnny Head-in-Air, in colour, 4694
 Johnny shall have a new bonnet, 2484
Johnson, E. Pauline
 Harvest Time, 4607
 Prairie greyhounds, 5388
 The song my paddle sings, 4605
Jonson, Ben
 Hymn on the Nativity of my Saviour, A, 2151
 True Growth, 1856
 Joy of Life, 1125
 Judge not the workings of his brain, 1490
 June, 2193
 Just for a handful of silver he left us, 6118

K

Keats, John
 Fairy Song, 700
 On first looking into Chapman's Homer, 2647
 On the Grasshopper and Cricket, 4651
 To a Nightingale, 2722
Keble, John
 Evening Hymn, 1560
 Rainbow, The, 1853
Keller, Helen
 Out of the uncharted, unthinkable dark, 5489
Key, Francis Scott
 The Star-Spangled Banner, 2005
 Kilmeny, A Fairy Legend, 4393
King, Mrs. Harriet E.
 Crocus, The, 4688
 King and the Abbot, The, 2401
 King Baby on his throne, 3560
 King Bruce and the Spider, 2479
 King, from the council chamber came, The, 5240
 King Lear and His Three Daughters, 2645
 King of Clubs, he often drubs, The, 3638
 King of France and four thousand men, The, 2294
 King of France went up the hill, The, 2128
 King Pippin built a fine new hall, 2484
 King was on his throne, The, 2127
 King was sick. His cheek was red, The, 96
 King's Picture, The, 5240
Kingsley, Charles
 Farewell, A, 96
 Lost Doll, The, 4525
 Sands of Dee, The, 470
 Three Fishers, The, 2480
 Tide River, The, 2648
 Ugly Princess, The, 4527
 Young and Old, 3348
Kinney, Coates
 Rain on the Roof, 5490
Kipling, Rudyard
 Overland Mail, The, 2482
 Recessional, The, 4854
 Kiss when I wake in the morning, A, 4924
 Kitten and the Falling Leaves, The, 3420
 Knave of Hearts, The, in colour, face 1409

L

La Bergère, 4212
 La boulangère a des écus, 4530
 La plus aimable à mon gré, 4212
 Ladybird, fly, with music, 3028
 Lady-bird, lady-bird, fly away home, 968
Lafontaine, Jean de
 Castle-builder, The, 3558
 Lamb, The, 700
Lamb, Charles and Mary
 Child and the Snake, The, 2126
 Housekeeper, The, 4264
 Lame Brother, The, 3418
 Love, Death and Reputation, 6119
 Old Familiar Faces, The, 3556
 Lambs, 3559
 Lame Brother, The, 3418
 Lamps now glitter down the street, The, 95
 Land of Nod, The, 1035
 Land of Thus-and-So, The, 5047
Landor, Walter Savage
 Finis, 4690
 Late Leaves, 3794
 Lark-bird, lark-bird soaring high, 3559
 Lars Porsena of Clusium, 1403
 Last Charge of the French at Waterloo, The, 2480
 Last Man, The, 3843
 Last Ride Together, 5140
 Last Rose of Summer, 1490
 Late Leaves, 3794
 Laughing Brook, The, 4855
 Laughing Song, A, 3272
 Lavender blue and rosemary green, 4016
 Lavender's blue, diddle, diddle, with music, 4925
 Lay me a green sod under my head, 2606
 Lay of the Last Minstrel, The, 2809
 Lead Kindly Light, 1995
 Leak in the Dyke, The, 1781
Lear, Edwin
 Nonsense Rhymes, 1038, 3968, 6231
 Leaves and the Wind, The, 2292
 Leaves are falling; so am I, The, 3794
Legaré, James Matthew
 Ahab Mohammed, 4265
 Lend me thy mare to go a mile, in colour, 4267
 Les Petits Bateaux, 4212
 Lesson of the Honey Bees, 2919
 Lesson of the Water Mill, The, 4639
 Letty's Globe, 1749
 Life and thought have gone away, 3636
 Life! I know not what thou art, 5244
 Life Lesson, A, 4265
 Life of man, The, 4396
 Light, 6120
 Light of Our Virtues, 2920
 Lilies of the valley chime, The, 3027
 Like a blind spinner in the sun, 1885
 Lincoln, the Man of the Hour, 2647
 Lion and the Mouse, The, 1125
 Lion and the Unicorn, The, in colour, face 5614
 Lion with the heat oppress'd, A, 1125
Lisle, Bouget de
 Marseillaise, The, 4688
 Listen to the water mill, 4639
 Little Betty Winkle she had a little pig, 2726
 Little Bingo, with music, 2726
 Little birds are singing, The, 2724
 Little Boat, The, 4212
 Little Bobby Snooks was fond of his books, 4016
 Little Bo-peep has lost her sheep, with music, 1208
 Little Boy Blue, come blow up your horn, 925
 Little Busy Bee, The, 566
 Little Children, Wake and Listen, 2152
 Little cock sparrow sat on a green tree, A, 1408
 Little drops of water, 1033
 Little fairy comes at night, A, 1124
 Little, I ween, did Mary guess, 4525
 Little Jack Horner sat in a corner, 827; with music, 968
 Little lamb, who made thee? 700
 Little maid, pretty maid, whither goest thou? 3276
 Little Man in Leather, The, 3350
 Little Miss Muffet, 1277
 Little Miss Patty and Master Paul, in colour, 3845

INDEX OF POETRY

- Little Nanny Etticoat, 826
 Little old man and I fell out, A, 3275
 Little Polly Flinders, 569
 Little Robin Redbreast sat upon a tree, 3795
 Little saint best fits a little shrine, A, 2810
 Little Sister, The, 3559
 Little Sophy by the Seaside, 1491
 Little Star, The, 1124
 Little stream had lost its way, A, 4690
 Little Things, 1033
 Little Tom Tucker, 826
 Little Tommy Tittlemouse, 2405
 Little White Feathers, 3277
 Little White Lily, 3274
 Living for self and thinking of self, 1491
Logan, John E.
 When summer comes, 4604
 Long legs, crooked thighs, 3029
 London (in 1802), 3965
Longfellow, Henry Wadsworth
 Arrow and the Song, The, 4210
 Baby and the Brook, The, 4014
 Bell of Atri, The, 6227
 Bridge, The, 2193
 Builders, The, 3966
 Children's Hour, The, 3419
 Day is Done, The, 4922
 Daybreak, 3793
 Excelsior, 704
 Happiest Land, The, 1784
 Heights by great men reached, The, quota-
 tion, 4035
 Maidenhood, 5907
 Memories, 6119
 Norman Baron, The, 2807
 Old Clock on the Stairs, The, 3126
 Psalm of Life, A, 566
 Rain in Summer, 5241
 Serenade, 2292
 Ship of State, The, 924
 Ships That Pass in the Night, 4689
 Slave's Dream, The, 1034
 Snow Flakes, 1855
 Song of Birds, 4527
 Three Kings, The, 4919
 Tide Rises, the Tide Falls, The, 4921
 To the River Charles, 3637
 Village Blacksmith, The, 347
 Wreck of the Hesperus, The, 97
 Look over the wall, and I'll tell you why, in
 colour, 3844
 Lord, by whose might the Heavens stand, 5391
 Lord, It Belongs Not to My Care, 4397
 Lord my pasture shall prepare, The, 568
 Lord, who art merciful as well as just, 3026
 Lord Ullin's Daughter, 825
 Lord's Prayer in Verse, The, 4396
 Lorelei, The, 1885
 Loss of the Royal George, The, 472
 Lost Doll, The, 4525
 Lost Leader, The, 6118
 Love and Friendship, 4854
 Love in tears, 5908
 Love Knot, The, 2196
 Love me, Sweet, with all thou art, 2648
 Love Will Find Out the Way, 4689
 Love, won or lost, is countless gain, 5908
 Love's Reasonings, 5489
Lover, Samuel
 Angels' Whisper, The, 2808
 Fairy Tempter, The, 3348
Lowell, James Russell
 Aladdin, 4922
 Courtin', The, 1490
 Fatherland, The, 924
 Fountain, The, 701
 Incident in a Railroad Car, An, 5050
 June, 2193
 Parable, A, 5139
 Sower, The, 3843
 Stanza on Freedom, A, 4397
 Lucy, 700
 Lucy Gray, 1854
 Lucy Locket, 4398
Luke, Mrs.
 I Think When I Read, 5244
 Lullaby! O Lullaby, 4014
 Lullaby of an Infant Chief, 822
Lynn, Ethel
 Weighing the Baby, 1784
 Lute-voice birds rise with the light, The, 3274
- Lyte, H. F.**
 Abide with me, 3965
 Officer's Grave, The, 1785
- M**
 M. N. O., with music, 3275
Macaulay, Lord
 How Horatius Kept the Bridge, 1403
 Spanish Armada, The, 4523
Macdonald, George
 Baby, 568
 Better Things, 5488
 Little White Lily, 3274
 Over the Hill, 5046
 Wind and the Moon, The, 3128
Mackay, Dr. Charles
 Deed and a Word, A, 4690
 Love's Reasonings, 5489
 Miller of Dee, The, 6228
 Sea-king's Burial, The, 3417
 William the Conqueror, 3347
Mahoney, Francis Sylvester
 Bells of Shandon, The, 5906
 Maiden! with the meek brown eyes, 5907
 Maidenhood, 5907
 Man in the Moon, The, 2128
 Man in the wilderness asked me, The, 3638
 Man Who Is Twelve Years Old, The, 5377
 Man's a Man for a' That, A, 4690
 Man's Good Name, A, 2920
 Man's Greatest Treasure, 2920
 Man's Requirements, A, 2648
 Maple leaf forever, 2466
 March, 1276
 March Meadows, 3559
 March winds and April showers, 2813
 Marching down to Armageddon, 3964
 Marco Bozzaris, 5377
 Maria intended a letter to write, 3419
Markham, Edwin
 Lincoln, the Man of the Hour, 2647
Marlowe, Christopher
 Passionate Shepherd, The, 5047
 Marseillaise, The, 4688
 Mary had a little lamb, 5141
 Mary had a pretty bird, 3638
 Mary, Mary, quite contrary, 2408
 Mary Stuart's Farewell, 2402
 Massa's in the cold, cold Ground, 5376
 Master I have, and I am his man, 3799
 Matthew, Mark, Luke, and John, 827
 Maud Müller on a summer's day, 3271
McCarroll, James
 A Royal Race, 5389
McGee, Thomas D'Arcy
 Jacques Cartier, 4604
 The Arctic Indian's faith, 5389
McLellan, Isaac
 Death of Napoleon, The, 2293
McLennan, William
 Hills o' Skye, 5388
 Melancholy days are come, The, 4651
 Memories, 6119
 Memory, 3964
 Men of Old, The, 4525
Meredith, William T.
 Farragut, 2404
 Merry are the bells, in colour, 2157
 Merrily swinging on brier and weed, 2481
 Mid pleasures and palaces though we may
 roam, 470
Miles, Alfred H.
 Big and Little Things, 3637
Miller, Emily H.
 Jesus bids us shine, 3966
Miller, Joaquin
 Bravest battle that ever was fought, The, 4690
 Columbus, 567
Miller, Thomas
 Industry of Animals, The, 3274
 Mother to Her Infant, The, 3348
 Spring Walk, The, 3126
 Sun, The, 1491
Miller, William
 Wee Willie Winkie, 822
 Miller of Dee, The, 6228
 Millions of massive raindrops, 4652
Milton, John
 On May Morning, 1275
 To the Lord General Cromwell, 3965
 When I consider how my light is spent, 6120
 Milton! thou shouldst be living at this hour, 3965

INDEX OF POETRY

Mine be a cot beside a hill, 924
 Mine eyes have seen the glory, 4527
 Mine host of the Golden Apple, 3026
 Minnie and Winnie, 1035
 Minstrel Boy, The, 566
 Miss Kitty was rude at the table one day, 569
 Miss Poppy, 4853
 Miss Sophy, one fine sunny day, 4014
Mitford, Mary Russell
 Joy of Life, 1125
 Molly, my sister, and I fell out, 4015
 Monday's child is fair of face, 5141
Montgomery, James
 Daisy at Christmas, A, 4922
 Months, The, 471
 Moon held court in Holyrood, The, 5138
Moore, Clement C.
 Visit from St. Nicholas, 2195
Moore, Thomas
 Alas! how light a cause may move, 6118
 As down in sunless retreats, 1885
 Believe me if all those endearing young
 charms, 6120
 Canadian Boat Song, A, 3026, 4605
 Harp that once through Tara's halls, 5906
 Last Rose of Summer, 1490
 Love and Friendship, 4854
 Minstrel Boy, The, 566
 Off in the Stilly Night, 3794
 Poor Dog Tray, 3272
 She is Far From the Land, 3556
 Sound the Loud Timbrel, 5376
 Morning and Evening, 1849
 Morning, evening, noon, and night, 4207

Morris, William
 Voice of Toil, The, 3842
 Mother, 1553
 Mother, may I go and bathe? 4528
 Mother Mitchell one day lost her pussy, alack,
 4530
 Mother, mother, the winds are at play, 5488
 Mother to Her Infant, The, 3348
 Mother's Kisses, 1125
 Mountain and the Squirrel, The, 924
 Mounted (The) Police, 4607
 Mouse and the Cake, The, 4209
 Mouse found a beautiful piece of plum-cake, A,
 4209
 Mr. East gave a feast, 4528
 Much have I travelled, 2647
 Muffled drums' sad roll has beat, The, 5379
Muir, Alexander
 The maple leaf forever, 2466
Mulock, Dinah Maria
 Douglas, Douglas, Tender and True, 1884
 Multiplication is vexation, 925
 Musical Instrument, A, 1783
 My banks they are furnished with bees, 1033
 My beautiful! my beautiful! that standest
 meekly by, 702
 My boat is on the shore, 6119
 My country, 'tis of thee, 3636
 My dear, do you know, 4529
 My faith looks up to Thee, 4206
 My fairest child, I have no song to give you,
 96
 My father he died, in colour, 2295
 My father he left me three acres of land, 3030
 My good blade carves the casques of men,
 1032
 My heart aches, and a drowsy numbness pains,
 2722
 My Heart's in the Highlands, 1560
 My heart leaps up when I behold, 701
 My house is red—a little house, 3422
 My Kate, 5908
 My Lady Wind, 5491
 My little old man and I fell out, 2128
 My lov'd, my honour'd, much respected friend,
 4011
 My Maid Mary, in colour, 2154
 My Maryland, 2482
 My Menagerie, 2194
 My mind lets go a thousand things, 3964
 My Mother, 822
 My Mother's Hands, 2648
 My Old Kentucky Home, 3346
 My parents bow, and lead me forth, 4527
 My parents sleep both in one grave, 3418

My Playmate, 4920
 My Shadow, 95
 My Ships, 1782
 My soul, there is a country, 3966
 My strength is failing fast, 3417
 My true love hath my heart, and I have his,
 3793

N

Name in the Sand, A, 4208
 Nathan Hale, 1559
 Nation's Strength, A, 4525
 Nesting Hour, The, 3559
 New Pelisse, The, 3559
Newbolt, Henry
 Best School of All, The, 3128
Newman, Cardinal
 Lead, Kindly Light, 1995
 Nick and a nock, A, 4016
 Night, 5907
 Night has a thousand eyes, The, 6120
 Nightingale and the Glow-worm, The, 700
 Nightingale, that all day long, A, 700
 No need to the circus to go have I, 2194
 No stir in the air, no stir in the sea, 2125
 No sun, no moon, 4526
 No, trust me; she is peevish, sullen, froward,
 2920
 Noblest Roman, The, 2919
 Nonsense rhymes of Edward Lear, 1038, 3968,
 6231
 Noon was shady, and soft airs, The, 2126
 Norman Baron, The, 2807
 North wind doth blow, The, 112
Norton, Hon. Mrs.
 Arab's Farewell to His Steed, The, 702
 Not a drum was heard, not a funeral note, 701
 Not gold, but only man can make, 4525
 November in England, 4526
 Now, all of you, give heed unto, 4652
 Now, he who knows old Christmas, 5048
 Now the bright morning star, day's harbinger,
 1275
 Now the day is over, 5490
 Now, what do you think, in colour, 4267
 Nurse's Song, 1856

O

O, all you little Blackie-tops, in colour, face 707
 O blithe new-comer, I have heard, 1883
 O, Boys, Carry me 'Long, 2194
 O Captain! my Captain, 2005
 O Dear what can the matter be? with music,
 5909
 O fir-tree fine, 3028
 O God! it is a fearful thing, 3125
 O God! methinks it were a happy life, 2918
 O God, our help in ages past, 1785
 O leave this barren spot to me, 471
 O little lambs, the month is cold, 3559
 O Mammy's Pickaninny, 4855
 O Mary, go and call the cattle home, 470
 O Mother-My-Love, if you'll give me your
 hand, 3797
 O, my love's like a red, red rose, 5047
 O! say, can you see, by the dawn's early light,
 2005
 O, say, what is that thing call'd light, 1033
 O ship incoming from the sea, 5389
 O Thou that sendest out the man, 4649
 Ode on Immortality, 3633
 Ode on the Death of Wellington, 4647
 O'er a low couch the setting sun, 4208
 Of a' the airts the wind can blow, 5140
 Of all the gay birds that e'er I did see, 3795
 Of all the girls that are so smart, 3793
 Of all the thoughts of God that are, 5377
 Of Nelson and the North, 1854
 Off Rivière du Loup, 5389
 Officer's Grave, The, 1785
 Oft I had heard of Lucy Gray, 1854
 Oft I remember those whom I have known, 6119
 Oft in the Stilly Night, 3794
Ogilvie, Will H.
 Apple Winds, The, 5244
 Holyrood, 5138
 Oh, a dainty plant is the ivy green, 2403
 Oh, a wonderful stream is the river of Time,
 4650

INDEX OF POETRY

P

- Oh, deem not they are blest alone, 4855
 Oh, hush thee, my baby, thy sire was a knight,
 822
 Oh, Look at the Moon, 3026
 Oh, my pretty cock, 3421
 Oh, ring the bells, 3349
 Oh, to be in England, 2005
 Oh, where and oh where is my little wee dog?
 4528
 Oh, where are all the good little girls? 3277
 Oh, who is so merry, 2922
 Oh, who would keep a little bird confined?
 3558
 Oh, young Lochinvar is come out of the West,
 4687
O'Hara, Theodore
 Bivouac of the Dead, The, 5379
 Old Abram Brown is dead and gone, 2128
 Old Arm Chair, The, 2194
 Old Christmas, by Mary Howitt, 5048
 Old Christmas, by Sir Walter Scott, 2150
 Old Cloak, The, 3794
 Old Clock on the Stairs, The, 3126
 Old Familiar Faces, The, 3556
 Old Folks at Home, 1558
 Old Friends, 6120
 Old King Cole was a merry old soul, 4856; with
 music, 4857
 Old Ironsides, 1558
 Old Mother Hubbard, 2483
 Old Mother Twitcheit had but one eye, 3029
 Old woman and her pig, The, 6121
 Old woman, old woman, shall we go shearing?
 3276
 Old Woman, Tossed up in a Blanket, with
 music, 1688
 "Ole Tam on Bord-a-Plouffe," 5387
 Omission, 4854
 On came the whirlwind — like the last, 2480
 On Christmas Eve I turned the spit, 4398
 On first looking into Chapman's Homer, 2647
 On his blindness, Milton, 6120
 On Linden, when the sun was low, 1035
 On May morning, 1275
 On Saturday night, 3638
 On Sir Philip Sidney, 5487
 On the bridge of Avignon, 5142
 On the Grasshopper and Cricket, 4651
 On the green banks of Shannon, when Sheelah
 was nigh, 3272
 Once in Persia ruled a king, 471
 Once in Royal David's City, 2152
 Once on a time I saw a bear, 2484
 Once on a time Love, Death and Reputation,
 6119
 Once upon a midnight dreary, 4263
 One and one, 3277
 One hot summer day a hunter went out, 4692
 One, I love; two, I love, 2922
 One lesson, Nature, let me learn of thee, 5242
 One misty morning, 3350
 One misty, moisty morning, in colour, 2813
 One not learned, save in gracious household
 ways, 1558
 One, two, buckle my shoe, in colour, 2814
 One, two, three, four, five, 3421
 One was a king, and wide domain, 5489
 Only a Baby Small, 2723
 Only a Boy, 5374
 Opportunity, 4396
O'Reilly, John Boyle
 Cry of the Dreamer, The, 4689
 Orpheus with his lute made trees, 2915
O'Shaughnessy, Arthur
 St. John Baptist, 5742
 Work of the Poets, The, 4266
 Others abide our question. Thou art free,
 4013
 Our band is few, but true and tried, 1559
 Our Norland, 4530
 Out and in the river is winding, 4606
 Out of the bosom of the air, 1855
 Out of the frozen earth below, 4688
 Out of the uncharted, unthinkable dark, 5489
 Over hill, over dale, 2915
 Over the Hill, 5046
 Over the mountains, 4689
 Over the river and through the wood, 4855
 Overland Mail, 2482
 Owl, The, 4688
 Owl and the Pussy Cat, The, 5141
Palmer, Ray
 Faith, 4206
 Pan! Qu'est-ce qu'est là? 4400
 Papa, les petits bateaux, 4212
 Parable, A, 5139
 Parrot, The, 1276
 Parrot, from the Spanish Main, A, 1276
 Passing through a little wood, 4925
 Passionate Shepherd, The, 5047
 Pat-a-cake, pat-a-cake, baker's man, 1036
Patmore, Coventry
 Love in Tears, 5908
 Selection, 6119
 Patriot, The, 4651
Payne, John Howard
 Home, Sweet Home, 470
 Peace, 3966
Peacock, Thomas Love
 Priest and the Mulberry Tree, The, 3272
 Peasant stood before a king and said, A, 4265
 Pease-pudding hot, 1277
 Peg, peg, with a wooden leg, 3638
 Pemmie was a pretty girl, 1858
 Perilous life, and sad as life may be, A, 1276
Perry, Nora
 Love Knot, The, 2193
 Pet Lamb, The, 1881
 Peter Bell: A Tale, 3963
 Peter, Peter, pumpkin eater, 4015
 Peter Piper picked a peck of pickled pepper,
 826
 Peter White will ne'er go right, 968
 Pictures in the Fire, 824
 Pie sat on a pear-tree, A, 3030
 Pied Piper of Hamelin, The, 344
Pierpont, John
 Warren's Address, 2292
 Pilgrim, The, 2004
 Pilgrim Fathers, The, 5138
 Pillowed and hushed on the silent plain,
 4607
 Pines were dark on Ramoth Hill, The, 4920
 Piping Down the Valleys Wild, 5376
 Plains (The) of Abraham, 5390
 Planting the Apple-tree, 5240
Platt, John James
 Rose and Root, 3964
 Playgrounds, 3559
 Please to remember, 4528
Poe, Edgar Allan
 Bells, The, 3273
 Raven, The, 4263
 Poet and the Bird, The, 5489
 Poet's cat, sedate and grave, A, 1784
 Poet's Last Thoughts, A, 4266
 Poetry of earth is never dead, The, 4651
 Polly, put the kettle on, 925
 Polly's, Peg's, and Poppety's, 3845
 Poor babes in the wood, The, in colour, 4529
 Poor Billy boy was music mad, 3277
 Poor Dicky's dead, 3421
 Poor Dog Tray, 3272
 Poor old Robinson Crusoe, 4528
 Prairie greyhounds, 5388
 Praise of England, The, 2919
 Prayer, A, 3026
 Pretty flowers, tell me why, 4926
 Pretty maid, pretty maid, 1277
 Priest and the Mulberry Tree, The, 3272
 Prince Finkin and his mamma, 3844
 Princess, The, 4527
Pringle, Thomas
 Afar in the Desert, 1885
 Prisoner of Chillon, The, 3125
Procter, Adelaide Anne
 Pictures in the Fire, 824
Procter, Bryan Waller see Cornwall, Barry
 Prospect, 1032
 Psalm of Life, A, 566
 Punch and Judy fought for a pie, 4015
 Pure, the bright, the beautiful, The, 2723
 Purest treasure mortal times afford, The,
 2920
 Pussy cat ate the dumplings, 3795
 Pussy cat, pussy cat, where have you been?
 2407
 Pussy sits beside the fire, in colour, 4267
 Pussy-cat Mew jumped over a coal, 4016
 Pussy-cat Mole, 2408

INDEX OF POETRY

Q

Quality of mercy is not strained, The, 2920
Queen and the Flowers, The, 1883
Queen Anne, Queen Anne, she sits in the sun,
3030
Queen Mab, 1124
Queen of Hearts, The, face 1409
Quiet Work, 5242

R

Rain, 94
Rain in Summer, 5241
Rain is raining all around, The, 94
Rain on the Roof, 5490
Rainbow, The, by John Keble, 1853
Rainbow, The, by Wordsworth, 701
Raleigh, Sir Walter
Conclusion, The, 3842
Ramène Tes Moutons, 4212
Randall, James Eyder
My Maryland, 2482
Why the Robin's Breast is Red, 3964
Rands, William Brighty
The World, 824
Rapid (The), 4607
Raven, The, 4263
Raven and the Oak, The, 2404
Read, T. Buchanan
Sheridan's Ride, 2293
Reaper, The, 1561
Recessional, The, 4854
Reconciliation, The, 6120
Red, Red Rose, A, 5047
Red (The) River voyageur, 4606
Retired Cat, The, 1784
Revenge, The, 4205
Ride a cock horse, picture, 6230
Ride away, ride away, Johnny shall ride,
2154
Riley, James Whitcomb
Land of Thus-and-So, The, 5047
Life Lesson, A, 4265
Ring Out, Wild Bells, 2153
Ring the bells — ring, 4398
Ring-ting! I wish I were a primrose, 1033
River, The, 2810; 5389
River that in silence windest, 3637
Robert Barnes, fellow fine, 3030
Robert of Lincoln, 2481
Robin and Richard were two pretty men, 827
Robin and the red-breast, The, 3349
Robin and the wren, The, 3638
Robin Hood, Robin Hood, 4856
Robin Redbreast, 472
Robin the Bobbin, the big, greedy Ben, 2405
Robin-a-Robin, 4016
Robin-Friend has gone to bed, 3559
Rock-a-by, baby, thy cradle is green, 3799
Rock-a-by Lady, The, 4923
Rock of Ages, 3026
Rogers, Samuel
Geneva, 1882
Wish, A, 924
Roguey, Poguey Bogie Man, A, 4654
Roscoe, William
Butterfly's Ball, The, 1034
Rose, The, 5907
Rose aloft in sunny air, The, 3964
Rose and Root, 3964
Rose is red, The, 4398
Rossetti, Christina
Goblin Market, 1849
Up-Hill, 4688
Rossetti, D. G.
Sudden Light, 4209
Round de meadows am a-ringing, 5376
Rowley Powley, pudding and pie, 569
Royal (A) Race, 5389
Rub-a-dub-dub, 3421
Rule, Britannia, 568

S

Sad Ventures, 5244
Said a people to a poet, 5489
Said the wind to the moon, I will blow you
out, 3128
Sail on, sail on, O ship of state, 924
St. John Baptist, 5742

St. Swithin's Day, if thou dost rain, 1688
Sally in our Alley, 3793
Sammy Smith would drink and eat, 922
Sandpiper, The, 4266
Sands of Dee, The, 470
Sangster, Charles
Our Norland, 4603
The Plains of Abraham, 5390
The rapid, 4607
Sangster, Margaret
Omission, 4854
Saviour bowed beneath His cross, The, 3964
Say not, because he did no wondrous deed, 5374
Say Not the Struggle Naught Availeth 3274
Scantlebury, Elizabeth
Laughing Brook, The, 4855
Scots, wha hae wi' Wallace bled, 824
Scott, Duncan Campbell
Off Rivière du Loup, 5389
Scott, Frederick George
A Hymn of Empire, 5391
The Colours of the Flag, 5390
The River, 5389
The unnamed lake, 4605
Scott, Sir Walter
Jock of Hazeldean, 1856
Last Charge of the French at Waterloo, The,
2480
Lay of the Last Minstrel, The, 2809
Lullaby of an Infant Chief, 822
Old Christmas, 2150
Sound Loud the Clarion, 3348
Time, 5374
Young Lochinvar, 4687
Sea! the sea! the open sea! The, 4852
Sea-gull, sea-gull, sit on the sand, 1036
Sea-king's Burial, The, 3417
See the kitten on the wall, 3420
See-saw, Margery Daw, with music, 826
See-saw, sacaradown, 2484
Serenade, 2292
Service, Robert W.
The Mounted Police, 4607
Seven Ages of Man, The, 2921
Seven Times One, 3420
Shades of night were falling fast, The, 704
Shakespeare, 4013
Shakespeare, William
Ariel's Song, 317
As You Like It, extracts from, 2915, 2921
Court of Fairyland, in colour, frontis., vol. 2
Friends and Flatterers, 2920
Hamlet, extract from, 2920
Julius Caesar, extracts from, 94, 2917, 2919, 2921
King Henry IV., extract from, 2921
King Henry V., extracts from, 2919
King Henry VI., extracts from, 2918, 2921
King Henry VIII., extracts from, 2915, 2916
King John, extract from, 2919
Love's Labour's Lost, extracts from, 2915, 2921
Macbeth, extract from, 2921
Measure for Measure, extracts from, 2920, 2921
Merchant of Venice, The, extracts from, 2920,
2921
Midsummer Night's Dream, A, extracts
from, 2915
Othello, extract from, 2920
Richard II., extracts from, 2919, 2920
Sayings from Shakespeare, 2921
Silvia, 3842
Songs from Shakespeare, 2915
Troilus and Cressida, extract from, 2921
Two Gentlemen of Verona, extract from, 2920
Shall I sing? says the lark, 3349
Shanley, Charles Dawson
The Walker of the Snow, 4606
She dwelt among the untrodden ways, 700
She has laughed as softly as if she sighed, 4209
She is far from the land, 3556
She Walks in Beauty, 3347
She Was a Phantom of Delight, 3347
She was not as pretty as women I know, 5908
Shed no tear! O, shed no tear, 700
Shelley, Percy Bysshe
Autumn, 2193
Cloud, The, 5239
Night, 5907
Skylark, The, 5137
Shenstone, William
Shepherd's Cot, The, 1033
Shepherd boy's song in Pilgrim's Progress, 3842

INDEX OF POETRY

- Shepherd's Happy Life, The, 2918
 Shepherdess, The, 4212
 Sheridan's Ride, 2293
 Ship of State, The, 924
 Ships That Pass in the Night, 4689
 Shock-headed Peter, in colour, 4691
 Should auld acquaintance be forgot, 3274
 Shuffle-Shoon and Amber-Locks, in colour, 3841
Sidney, Sir Philip
 Bargain, The, 3793
 Sigh, A, 4922
Sigourney, Mrs.
 Silence augmenteth grief, writing increaseth rage, 5487
 Silent Voices, The, 2194
Sill, Edward Rowland
 Opportunity, 4396
 Silvia, 3842
 Simon Brodie had a cow, 3633
 Simple Simon met a pieman, 5246
 Sing a song of sixpence, with music, 705
 Sing, sing, what shall I sing? 826
 Sing, ye ripening fields of wheat, 4607
 Sir Galahad, 1032
 Sir Sidney Smith, 1853
 Skylark, The, 5137
 Slave's Dream, The, 1034
 Sleep, The, 5377
 Sleep, baby, sleep, 3276
 Sleep, baby, sleep, 5906
 Sleep, Beauty Bright, 1857
 Sleep, sonny darling, your mother's delight, 3027
 Sluggard, The, 700
 Slumber, my darling, no danger is near, 3348
Smiley, Maurice
 The Man Who Is Twelve Years Old, 5377
Smith, Samuel Francis
 My country, 'tis of thee, 3636
 Snow Flakes, 1855
 Snow Storm, The, 3348
 So are the stars and the arching skies, 5243
 So work the honey bees, 2919
 Solitude, 4649
 Solomon Grundy, 2407
 Some little mice sat in a barn to spin, 2726
 Somebody crawls into mamma's bed, 564
 Somebody's Mother, 5241
 Somewhat back from the village street, 3126
 Somewhere it is always light, 1491
 Son of My Heart, 3027
 Song my paddle sings, 4605
 Song of Birds, 4527
 Song of Marion's Men, 1559
 Song of the Camp, A., 1884
 Song of the Golden Sea, 4607
 Song of the Shirt, The, 2808
 Song of the Two Hares, The, 3027
 Sorrow, 4526
 Sound, Sound the Clarion, 3348, with picture, 5045
 Sound the Loud Timbrel, 5376
Southey, Robert
 Battle of Blenheim, The, 565
 Cataract of Lodore, The, 1274
 Father William, 566
 Inchcape Rock, The, 2125
 Traveller's Return, The, 2125
 Prayer, A, 3026
 Sower, The, 3843
 Spacious Firmament on High, The, 4014
 Spanish Armada, The, 4523
 Speak Gently, 4265
 Speed on, speed on, good Master, 4606
 Spider and the Fly, The, 3555
 Splendour falls on castle walls, 3347
Spofford, Harriet Prescott
 Sigh, A, 4922
 Spring Walk, The, 3126
 Stand! the ground's your own, my braves, 2292
 Banza on Freedom, A, 4397
 Star-Spangled Banner, 2005
 Stars, The, 704
 Stars of the summer night, 2292
 Stately homes of England, The, 923
 Stay near me — do not take thy flight! 5742
Stedman, Edmund Clarence
 Discoverer, The, 4396
Stevenson, Robert Louis
 Armies in the Fire, 95
 Epitaph, 2316
 Land of Nod, The, 1035
 My Shadow, 95
Stevenson, Robert Louis
 Rain, 94
 Travel, 1122
 Unseen Playmate, The, 702
 Still, still with Thee, when purple morning breaketh, 5906
Stoddard, Richard Henry
 Birds, 3965
 Flight of the Arrow, The, 4396
 Flight of Youth, The, 5242
 Stormy Petrel, The, 4526
 Story of a Blackamoor, The, in colour, 4693
 Story of Fidgety Philip, The, in colour, 4691
 Story of Flying Robert, The, in colour, 4694
 Story of Life, A, 5243
Stowe, Harriet Beecher
 When I awake I am still with thee, 5906
 Stream and the Ocean, The, 2403
 Streamlet down from the mountainous glen, The, 2403
 Strong Son of God, Immortal Love, 3959
 Such beautiful, beautiful hands, 2648
 Sudden Light, 4209
 Sum, sum, sum, 3970
 Summer is a-coming in, 2192
 Sun, The, 1491
 Sun is a glorious thing, The, 4210
 Sun is careering in glory and might, The, 1125
 Sun is down, and time gone by, The, 1035
 Sun of my soul, thou Saviour dear, 1560
 Sun was falling off to sleep, The, 5380
 Sun was shining on the sea, The, 1562
 Sunset and evening star, 1561
 Sunshiny shower, A, 2128
 Sunshine bright in the old Kentucky home, The, 3346
 Suppose the Little Cowslip, 5140
 Sur le pont d'Avignon, 5142
 Swarm of bees in May, A, 1568
 Sweet and low, sweet and low, 470
 Sweet Auburn, loveliest village of the plain, 5739
 Sweet is Childhood, 5243
 Sweet to the morning traveller, 2125
 Sweetest Lives, The, 1558
 Swiftly walk over the western wave, 5907

T

- Tabb, John Banister**
 In Absence, 1561
 Taffy was a Welshman, Taffy was a thief, 1036
Tate, Nahum
 Twenty-third Psalm, The, 5
Taylor, Bayard
 Bedouin Song, 5046
 Song of the Camp, A, 1884
Taylor, Benjamin Franklin
 Isle of Long Ago, The, 4650
Taylor, Jane
 Good-night, 472
 Horse, The, 2480
 Little Star, The, 1124
 My Mother, 822
Taylor, Jeffreys
 Lion and the Mouse, The, 1125
 Young Mouse, The, 922
 Teach me, my God and King, 3965
 Tears, Idle Tears, 1783
 Teeny-Weeny, 5492
 Tell me not, in mournful numbers, 566
 Tell tale tit, 1568
 "Temple to Friendship," said Laura, enchanted, A, 4854
 Tender-handed stroke a nettle, 3557
Tennyson, Alfred, Lord
 Beggar Maid, The, 822
 Break, Break, Break, 5046
 Brook, The, 95
 Bugle, The, 3347
 Charge of the Light Brigade, The, 1782
 Cradle Song, 1857
 Crossing the Bar, 1561
 Death of the Old Year, 2153
 Defence of Lucknow, The, 3791
 Deserted House, The, 3636
 England and America in 1782, 4649
 In Memoriam, extracts, 3959, 6119, 6120
 Locksley Hall, extract from, 5243
 Minnie and Winnie, 1035
 Mother, 1558
 Ode on the Death of Wellington, 4647
 Owl, The, 4688

INDEX OF POETRY

Tennyson, Alfred, Lord

Princess, The, a selection, 4527
 Quotations from, 3863, 4746
 Reconciliation, The, 6120
 Revenge, The, 4205
 Ring Out, Wild Bells, 2153
 Silent Voices, The, 2194
 Sir Galahad, 1032
 Sweet and Low, 470
 Tears, Idle Tears, 1783
 Ulysses, 4650

Tennyson-Turner, C.

Letty's Globe, 1749
 Little Sophy by the Seaside, 1491
 Ternarie of Littles, A, 2310
 Terrible Ball, The, 1857

Thackeray, William Makepeace

Cane-bottomed Chair, The, 5613
 Tragic Story, A, 1125
 Thanksgiving Day, 4855

Thaxter, Celia

Sandpiper, The, 4266
 The despot's heel is on thy shore, 2482
 The golden sickle moon slips down the west, 2647

Then the little Hiawatha, 5391
 There are gains for all our losses, 5242
 There are sounds like flakes of snow falling, 3427

There is a flower, a little flower, 4922
 There is a pleasure in the pathless woods, 4649

There is in the wide, lone sea, 1785
 There, little girl, don't cry, 4265
 There lived a sage in days of yore, 1125
 There once was a bird that lived up in a tree, 5050

There sat one day in quiet, 1784
 There was a fern on the mountain, 4853
 There was a frog lived in a well, 5245
 There was a jolly miller, 2813
 There was a king in olden days, 1883
 There was a king met a king, 3029
 There was a little boy and a little girl, 2123
 There was a little boy went into a field, 2726
 There was a little girl, who had a little curl, 569

There was a little man, and he had a little gun, 3799

There was a little man who wooed a little maid, 4211

There was a little rabbit sprig, 1568
 There was a man, and he had naught, in colour, 1564

There was a man, and he went mad, 1278
 There was a man of Thessaly, 3030
 There was a monkey climbed up a tree, 1037
 There was a sound of revelry by night, 5378
 There was a time when meadow, grove, and stream, 3633

There was a young lady of Bute, 1038
 There was a young lady of Portugal, 3968
 There was a young lady of Russia, 3969
 There was a young lady of Troy, 646
 There was a youth, a well beloved youth, 5374
 There was an old lady all dressed in silk, 3277
 There was an old lady of Chertsey, 3968

There was an old man, 4211
 There was an old man at a casement, 3969
 There was an old man in a boat, 3969
 There was an old man in a pew, 3968
 There was an old man in a tree, 569
 There was an old man of Aosta, 3968
 There was an old man of Apulia, 3968
 There was an old man of Coblenz, 1038
 There was an old man of Corfu, 1038
 There was an old man of Kilkenny, 1038
 There was an old man of Nepaul, 3969
 There was an old man on some rocks, 3969
 There was an old man who said Hush, 1038
 There was an old man with a flute, 3969
 There was an old man with a poker, 3968
 There was an old person of Basing, 3968
 There was an old person of Chili, 3969
 There was an old person of Dover, 3969
 There was an old person of Dutton, 1038
 There was an old person of Mold, 1038
 There was an old person of Rhodes, 3968
 There was an old person of Sparta, 1038
 There was an old woman, and what do you think, 2403

There was an old woman, as I've heard tell, in colour, face 925

There was an old woman called Nothing-at-all, 2922

There was an old woman lived under a hill, 827
 There was an old woman toss'd in a blanket, with music, 1683

There was an old woman tossed up in a basket, in colour, face 3030

There was an old woman who had three sons, 4652

There was an old woman who lived in a shoe, in colour, face 924

There was an owl lived in an oak, 2922
 There were once two cats of Kilkenny, 4016

There were three jolly Welshmen, 4399
 There were three sisters in a hall, 4015

There were two blackbirds, 827
 There's a dear little home in Good-Children Street, 2006

There's a man that I know, 5377
 There's a neat little clock, 3275

There's a ship lies off Dunvegan, 5388
 There's a song in the air, 3419

There's all the difference in the world, 3370
 There's no dew left on the daisies and clover, 3420

There's nothing like a daddie, 4858
 There's Room at the Top, 1491

There's something in a flying horse, 3963
 They are slaves who fear to speak, 4397

They are such tiny feet, 4014
 They glide upon their endless way, 704

They say that God lives very high, 568
 They that wash on Friday, 3275

They told me, Heraclitus, they told you were dead, 5376

Things That Never Die, 2723
 Thirty days hath September, 826

Thirty white horses upon a red hill, 3029
 This England never did, nor never shall, 2919

This I beheld, or dreamed it in a dream, 4396
 This little pig went to market, 827

This royal throne of kings, this scepter'd isle, 2919

This was the noblest Roman of them all, 2919
 This winter's weather it waxeth cold, 3794

This world is too much with us, 6119
 Thomas à Tattamus took two T's, 4211

Thomson, James
 Rule, Britannia, 568

Thorpe, Rose Hartwick
 Curfew Bell, The, 3025

Thou blossom bright with autumn dew, 4855
 Thousand miles from land are we, A, 4526

Three Blind Mice, with music, 825
 Three fishers went sailing away to the west, 2480

Three hunters together a deer-stalking went, 3846

Three kings came riding from far away, 4919
 Three little girls were sitting on a rail, 3845

Three Old Ladies, The, 3277
 Three tabbies took out their cats to tea, in colour, 3845

Three wise men of Gotham, 2408
 Three Years She Grew, 4921

Thy Way, Not Mine, O Lord, 4013
 Thyself and thy belongings, 2920

Tide rises, the tide falls, The, 4921
 Tide River, The, 2648

Tiger, tiger, burning bright, 1125
 Tilton, Theodore

All Things shall Pass Away, 471
 Time, 5374

'Tis a lesson you should heed, 3420
 'Tis the last rose of summer, 1490

'Tis the voice of a sluggard; I heard him complain, 700

Tit-tat-toe, 4211
 To a Butterfly, 4013

To a Mountain Daisy, 4524
 To a Nightingale, 2722

To a Skylark, 5490
 To the River Charles, 3637

To a Waterfowl, 2810
 To Anthea, 3793

To drum-beat and heart-beat, 1559
 To market, to market, to buy a fat pig, 827

To the Cuckoo, by Wordsworth, 1883
 To the Fringed Gentian, 4855

INDEX OF POETRY

To the Lord General Cromwell, 3965
 To the Skylark, 2127
 To Thomas Moore, 6119
 Toll for the brave, 472
 Tom Bowling, 1785
 Tom, Tom, the piper's son, 2407
Toplady, Augustus M.
 Rock of Ages, 3026

Tragic Story, A, 1125
 Travel, 1122
 Traveller, what lies over the hill? 5046
 Traveller's Return, The, 2125
 Trip upon trendsies, in colour, 3639
 True Greatness, 2723
 True Growth, 1856
 Try again, 3420
 Turn, turn, thy hasty foot aside, 1856
Turner, Charles Tennyson: see Tennyson-
 Turner, Charles
Turner, Mrs. Elizabeth
 Ambitious Sophy, 4014
 Greedy Boy, The, 922
 How to Write a Letter, 3419
 'Twas in the prime of summer-time, 2123
 'Twas on a summer morning, 4853
 'Twas once upon a time, 3795
 'Twas the night before Christmas, when all
 through the house, 2195
 Tweedledum and Tweedledee, in colour, face
 5380
 Twenty-third Psalm, The, 568
 Twilight Song, A, 3569
 Twinkle, twinkle, little star, 1124
 'Twixt a hill and hollow, hollow pass, 3027
 Two Armies, The, 5139
 Two little boys named Willie, 2724
 Two little dogs sat by the fire, 3638
 Two little dogs were basking in the cinders,
 3795
 Two little girls are better than one, 3277
 Two little kittens, one stormy night, in colour,
 4263
 Two Lives, The, 5742
 Two Men, 5489
 Two Robin Redbreasts built their nest, 3799
 Two sticks and an apple, 1126
 Tying her bonnet under her chin, 2196

U

Ugly Princess, The, 4527
 Ulysses, 4650
 Uncle Sam's Young Army, 3418
 Under a spreading chestnut tree, 347
 Under a toadstool, 3967
 Under my window, 2648
 Under the greenwood tree, 2915
 Under the wide and starry sky, 2316
 Under the window is my garden, in colour, 3844
 Underneath an old oak-tree, 2404
 Unseen Playmate, The, 702
 Up from the meadows rich with corn, 4851
 Up from the South at the break of day, 2293
 Up hill and down dale, 3276
 Up the airy mountain, 567
 Up with me! up with me into the clouds, 5490
 Up-Hill, 4688
 Upon a time a neighing steed, 3127
 Upon St. Paul's steeple stands a tree, 3799
 Upon yon nearest rock top, 5141
 Useful Plough, The, 1276

V

Valediction, A, 1558
Van Dyke, Dr.
 Four Things, 5377
 God sends Love to You, 3419
Vaughan, Henry
 Peace, 3966
 Village Blacksmith, The, 347
 Vision of Belshazzar, The, 2127
 Vision of the Future, A, 5243
 Visit from St. Nicholas, A, 2195
 Voice of Toil, The, 3842

W

Waken, Christian children, 2152
 Walker (The) of the Snow, 4606
Waller, Edmund
 Rose, The, 5907
 Warm sun is failing, The, 2193
 Warren's Address to the American soldiers,
 2292
 Wash me and comb me, 3276
 Wassail! wassail! all over the town, in colour,
 4269
Watts, Isaac
 Cradle song, 5908
 Little Busy Bee, The, 566
 O God, our Help in Ages Past, 1785
 Sluggard, The, 700
Waugh, Edwin
 Christmas Morning, 2151
 Way down upon the Swanee River, 1558
 Way was long, the wind was cold, The, 2809
 Wayward Daughter's Fate, The, 2920
 We are all in the dumps, in colour, 2813
 We are the music-makers, 4266
 We are three brethren out of Spain, 3798
 We are Uncle Sam's young army, 3418
 We had a pleasant walk to-day, 3126
 We have been o'er land and sea, in colour, face
 frontispiece, vol. 2
 We have no Dryads in our woods, 4603
 We just shake hands at meeting, 6120
 We live in deeds, not years; in thoughts, not
 breaths, 1033
 We should fill the hours with the sweetest
 things, 3347
 We worship the spirit that walks unseen,
 5389
Weatherly, Frederic E.
 Discontented Apples, The, 2724
 Jealous Jack Frost, 2152
 Miss Poppy, 4853
 River, The, 2810
 What Bobbie Would Like, 3558
 What Might Have Been, 2724
 Wee, modest, crimson-tipped flower, 4524
 Wee Willie Winkie, in colour, 822, 2813
 Weighing the Baby, 1784
 Were I a birdie too, 3027
Wesley, Charles
 Gentle Jesus, meek and mild, 5243
 Jesu, Lover of my Soul, 4397
 West wind, blow from your prairie nest,
 4605
Westwood, Thomas
 Mine Host of the Golden Apple, 3026
 Wet sheet and a flowing sea, A, 4524
 What are little boys made of? 2408; with music,
 5142
 What Bobbie Would Like, 3558
 What Does It Matter, 5489
 What does little birdie say, 1857
 What Every Wise Child Should do, 5614
 What Everyone Knows, 824
 What I live for, 5047
 What is the blue on our flag, boys? 5390
 What is it you ask me, darling? 824
 What is the meaning of thy song, 5489
 What is the news of the day? in colour, 2813
 What is the rhyme for porringer? 2154
 What Might Have Been, 2724
 What the Stars Have Seen, 2724
 What's he that wishes so? 2919
 What was he doing, the great god Pan, 1783
 When all the world is young, lad, 3348
 When Britain first, at Heaven's command, 568
 When cats run home and light is come, 4688
 When children are playing alone on the green,
 702
 When Eve had led her lord away, 2724
 When Freedom from her mountain height,
 1884
 When good King Arthur ruled this land, in
 colour, 1566
 When I'm grown up, 2640
 When I awake I am still with thee, 5906
 When I consider how my light is spent, 6120
 When I was a bachelor, 2725
 When I was a beggarly boy, 4922
 When I was a little boy, 968
 When I'm put to bed to-day, 3422

INDEX OF POETRY

- When icicles hang by the wall, 2915
 When in the morning we arise, 2410
 When Letty had scarce pass'd her third glad year, 1749
 When little Fred was called to bed, 2128
 When little Sammy Soapsuds, 1126
 When on my day of life the night is falling, 3636
 When summer comes, 4604
 When the British warrior queen, 470
 When the dumb Hour clothed in black, 2194
 When the green woods laugh with the voice of joy, 3272
 When the humid shadows hover, 5490
 When the Norn Mother saw the whirlwind hour, 2647
 When the snow is on the ground, in colour, 4267
 When the voices of children are heard on the green, 1858
 When 'tis pouring fast with rain, 4694
 Where are you going to, my pretty maid? with music, 1126
 Where did you come from, baby dear? 568
 Where do you come from, river sweet? 2810
 Where have you been, my boy Tammie? 4653
 Where is the true man's fatherland? 924
 Where the bee sucks, there suck I, 317
 Where the pools are bright and deep, 701
 Where, where will be the birds that sing, 5488
 Which I wish to remark, 1561
 While We May, 4854
 White dove sat on the castle wall, The, 4267
 White Hart, The, with music, 3846
 Whither, midst falling dew, 2810
Whiting, W.
 Eternal Father, strong to save, 4852
Whitman, Walt
 O Captain! my Captain! 2005
Whittier, John Greenleaf
 At Last, 3636
 Barbara Frietchie, 4851
 Barefoot Boy, The, 2195
 Maud Müller, 3271
 My Playmate, 4920
 The Red River voyageur, 4606
 Who Can This Somebody Be? 564
 Who comes here? 825
 Who fed me from her gentle breast, 822
 Who is Silvia? What is she, 3842
 Who killed Cock Robin? 2406
 Who would true valour see? 2094
 Why do you laugh, little brook, 4855
 Why hurry, little river, 5389
 Why is Pussy in bed? 4856
 Why It Was Cold In May, 5489
 "Why sitt'st thou by that ruined wall," 5374
 Why the Robin's Breast is Red, 3964
 Why weep ye by the tide, ladie? 1856
Wilcox, Ella Wheeler
 Babyland, 1491
 My Ships, 1782
 Wishing, 2126
 Wild was the night, yet a wilder night, 2298
 Will you walk into my parlour? 3555
 William the Conqueror, 3347
 Willie's Lodger, 2724
 Willy boy, Willy boy, where are you going? in colour, 4267
 Wind and the Moon, The, 3128
 Wind came up out of the sea, A, 3793
 Wind in a Frolic, The, 348
 Wind one morning sprang up from sleep, The, 348
 Winter Song, A, 2915
 Winter Wind, The, 2915
 Wise Sayings from Shakespeare, 2921
 Wish, A, 924
 Wishing, by Ella Wheeler Wilcox, 2126
 Wishing, by William Allingham, 1033
 With deep affection and recollection, 5906
 With fingers weary and worn, 2808
 Without haste! without rest, 1559
Wolfe, Charles
 Burial of Sir John Moore, The, 701
 Wolsey, The Fall of Cardinal Wolsey, 2916
 Woman was old and ragged and grey, The, 5241
 Woman's cause is man's, The, 4527
 Woman's Shortcomings, A, 4209
 Wonderful One-Hoss Shay, The, 5045
- Wordsworth, William**
 By the Sea, 1855
 Composed upon Westminster Bridge, 3966
 Daffodils, The, 96
 Fidelity, 3556
 I Travell'd Among Unknown Men, 4921
 Kitten and the Falling Leaves, The, 3420
 London (in 1802), 3965
 Lucy, 700
 Lucy Gray, 1854
 March, 1276
 Ode on Immortality, 3633
 Pet Lamb, The, 1881
 Peter Bell: A Tale (The Flight of Peter Bell), 3963
 Rainbow, The, 701
 Reaper, The, 1561
 She Was a Phantom of Delight, 3347
 Sonnet, 6119
 Three Years She Grew, 4921
 To a Butterfly, 4013
 To a Skylark, 5490
 To the Cuckoo, 1883
 To the Skylark, 2127
 Work, 5388
 Work of the Poets, The, 4266
 Work! use all thy will, give all thy might, 5388
 World, The, 824
 Worm, The, 1856
 Worn and footsore was the Prophet, 5139
Wotton, Sir Henry
 Character of a Happy Life, The, 4013
 Wreck of the Hesperus, The, 97
 Wynken, Blynken, and Nod, 92
- Y**
- Ye mariners of England, 704
 Ye sons of France, awake to glory, 4688
 Year had all the Days in charge, The, 5489
 Year's at the spring, The, 701
 You are going out to tea to-day, 4398
 You are old, Father William, the young man cried, 568
 You know we French stormed Ratisbon, 3966
 You see, merry Phyllis, that dear little maid, 3421
 You shall have an apple, 2128
 You spotted snakes, with double tongue, 2915
 Young and old, 3348
 Young lambs to sell, 826
 Young Lochinvar, 4687
 Young Mouse, The, 922
 Young Sophy leads a life without alloy, 1491
- SONGS WITH MUSIC**
- Baa, baa, black sheep, 1786
 Bees, The, 3970
 Bogle Man, The, 4654
 Child's Evening Prayer, 3422
 Cuckoo and the Jackass, 3796
 Curly Locks, 1568
 Dance a Baby, 2128
 Ding, dong, bell, 2484
 Frog he would a-wooing go, A, 1492
 Girls and boys come out to play, 1036
 Goosey, Goosey Gander, 2294
 Hickory, dickory, dock, in colour, face 706
 Hush-a-bye, baby, in colour, face 5615
 I love sixpence, 2405
 I saw three ships, in colour, 2154
 Jack and Jill, 5245
 Ladybird, Fly, 3028
 Lavender's Blue, 4925
 Little Bingo, 2726
 Little Bo-peep, 1208
 Little Jack Horner, 968
 M. N. O., 3275
 O Dear what can the matter be? 5909
 Old King Cole, 4857
 Old woman tossed in a blanket, 1688
 See-saw, Margery Daw, 826
 Sing a Song of Sixpence, 705
 Three blind mice, 925
 What are little boys made of? 5142
 Where are you going to, my pretty maid? 1126
 White Hart, The, 3846



